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MAST AND SAIL

IN EUROPE AND ASIA

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THAMES BARGES—BY W. L. WYLLIE

Frontispiece

MAST AND SAIL

IN EUROPE AND ASIA

BY

HERBERT WARINGTON SMYTH, C.M.G.

LIEUT.-COMMANDER R.N.V.R. (S.A.)
M.A., L.L.M., F.G.S., F.R.G.S., M.I.M.M.

AUTHOR OF
'FIVE YEARS IN SIAM,' 'SEA WAKE AND JUNGLE-TRAIL,' ETC.

ILLUSTRATED BY THE AUTHOR

And from Sketches by W. L. WYLLIE, R.A., W. ROBINS, E. W. COOKE, R.A., Admiral W. H. SMYTH, F.R.S., SIR W. WARINGTON SMYTH, F.R.S., General SIR NEVIL SMYTH, V.C., and BEVIL and NIGEL WARINGTON SMYTH

NEW EDITION

WILLIAM BLACKWOOD & SONS LTD.
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1929

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TO MY WIFE

FOR

"SWEET REMEMBRANCE"

SAKE

INTRODUCTION TO SECOND EDITION.

PREOCCUPATION due to the constant stream of events in South Africa—the grant of self-government to the Northern Colonies in 1908, the Union of the separate Colonies in 1910, the war with all its special demands from 1914, the industrial expansion and development in every direction after 1919—"*quorum pars parva fui*"—kept me from the possibility of revising 'Mast and Sail,' and making those alterations and additions which the passage of time made desirable for a second edition. Many requests have come for a new edition with suggestions for various extensions of the scope of the book, and for more yarns and illustrations. Mr Kipling was good enough to urge its extension to the Pacific canoes; others wanted a more detailed account of square-rig types, or of the American schooners of the Grand Banks. But from the first I have followed out as far as possible the idea of personal experience and observation, and have limited the work to the coastal craft of Europe and Asia with which I had some personal or practical acquaintance or direct interest. Moreover, the other branches of nautical observation, to my mind, call for special qualifications and experience. In things of the sea above all others it is

the reality of personal contact which is the breath and spirit, and a barge or trawler master will tell you more of the sea and of ships in an hour than a steamship company director in a year—though less about finance or tourist routes. Mr Frederick William Wallace and Mr Connolly have made first-hand literature of the Grand Bank schooners. The historian of the square rigger has been found in Captain Basil Lubbock, who, in his well-known books beginning with the 'China Clippers,' has laid all seamen of this and future generations under an obligation. My friend Sir Walter Runciman has told the tale of the Tyneside brigs; Mr Rex Clements and other competent writers have told of the practical handling of the big square-rig ships of the eighties and nineties, and Mr Somerscales and Mr Spurling have illustrated them in incomparable style.

I therefore feel justified in limiting the book to its original conception, and I have but amended or added in accordance with modern changes or recent observations. I have called into my support a few additional sketches from my sketch-books, some of a hundred years ago by my grandfather, Rear-Admiral W. H. Smyth, R.N., the cartographer of the Mediterranean, and some more recent ones by my two sons who were too young to draw or sail a boat when the first edition appeared.

I have to record my indebtedness to the 'Yachting Monthly Magazine' for the new 'lines' of craft published in this issue. That magazine commenced its career in the year of the first edition of 'Mast and Sail,' and ever since has kept up a wonderful level of interest to all who care for boats, bringing solace to many keen sailors stranded in shore billets

or in distant continents, as well as to the active sailor-men of two generations, with endless variety of artistry, humour, and sea experience.

I am also indebted to the kindness of the well-known American Magazine 'Yachting' and of Mr Maxwell Blake for permission to reproduce the lines of Far Eastern craft appearing in Chapters XI and XIII.

My thanks are due to many keen young sailor-men of the generation which has arisen since the publication of the first edition for encouragement and information, and especially to my friends Lionel Elin and Ralph Swann of the Royal Cruising Club, and to Clifford Hartford of the Royal Cape Yacht Club, my young and capable mate for many years in *Adventure*, *Irex*, and *Patricia*.

CALAMANSAC, FALMOUTH,
June 1929.

INTRODUCTION TO FIRST EDITION.

THE present chapters are the outcome of some years of varied sea travel. They attempt to record the peculiarities of the principal types of sailing-craft in Europe and Asia which I have observed, or of which I have had experience, and in many cases have handled for myself; and to consider, to some extent, the causes which have been at work in the development of boats and the results attained under the conditions with which they have had to contend. This book can only pretend to be a contribution to the literature of the subject,—indeed it would be wellnigh impossible for any one man personally to know the coastlines of the earth in sufficient detail, and to study or handle all the numerous types of sailing-boats, developed with endless variety and ingenuity in every locality, with sufficient intimacy to write on the whole subject. I can only hope here to indicate to those whose tastes are similar to my own the infinite interest of a study which 'Mast and Sail' can afford him.

Fate has led me to a city far inland in a continent of landsmen, and has cut short such cruises as I had hoped to make in order to render these observations more complete.

The question of arrangement of subject has been one of some difficulty. The grouping of sailing-boats under types is likely to lead to erroneous conclusions, since the choice of types is apt to be based on similarities which may be the result of accident or of mere imagination.

The arrangement of craft, on the other hand, in alphabetical order is bound to be unsatisfactory, both on account of the difficulties occasioned by the true signification of native names, and also because it brings the most heterogeneous types together regardless of any geographical or historical connection.

A geographical division seems, therefore, the most reasonable. The system of grouping under the names of the various seas, irrespective of country and nationality, while it has some obvious advantages over arrangement by political or other land divisions pure and simple, leaves still the difficulty of sub-division. A somewhat arbitrary combination of these two arrangements has, therefore, been adopted in the following pages. Europe has been placed before Asia on account of its more immediate interest to the majority of readers. Yet Asia may well claim precedence for the great antiquity of its types of sea-craft, which in most cases can claim a more remote origin than the oldest of those surviving in the Mediterranean or Norse seas.

My special thanks are due to my old comrade of Cambridge days and of many a good sea-cruise, J. F. Rowlatt, for much assistance in completing these notes; to my old friend Captain Drechsel, late of the Danish Navy, for much information contained in Chapter II; to Mr Colin Archer, of

Larvik, for details of Norwegian types; and to Mr Robert Duthie of the Scottish Fishery Board, to whose extensive knowledge and enthusiastic co-operation I am specially indebted for much valuable information in regard to the Scottish Fisheries. To Mr Alfred Cholmley and to my brother I am indebted for interesting points in regard to the methods of Red Sea dhow crews; and to Mr C. Forster Cooper, of my old College, for many particulars regarding the Maldive boats. My acknowledgments are also due to the authors of the valuable and delightful works of which a list is given at the end of the book.

H. WARINGTON SMYTH.

JOHANNESBURG,
January 1906.

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MAST AND SAIL

CHAPTER I

THE LIFE OF THE SAIL

The modern up-to-date seaport, gate of the Ocean highways, is to most people a place of hurry, noise, and discomfort. Heavy trains rumble on to the jetties to pick up or unload passengers landing or starting on their voyages. Bells clang, sirens hoot, porters jostle, and the rain generally descends in copious torrents from smut-begrimed iron roofs. In the dark-grey waters beyond the monster ships, far below their beetling cliff-like sides, steam tugs belch black smoke, and motor-boats hurry with ghastly detonation. Customs officers add their horrid attentions to the general din, and bill collectors, baggage agents, and charity collectors pursue their prey. A general pessimism prevails, in spite of cheering parties of farewell or of greeting, ships' bands, telegrams, and newspaper boys. Few souls in that struggling and homeless crowd can keep their self-respect or their natural charity to their fellow-creatures. Alas! how far removed seems this hustling jostling scene from the great orderliness of the high seas, the magnificent leisure of the vast spaces of the earth.

And yet, if time permits, in some remote corner of these long jetties you may find nestling together some small craft with masts tall and bright, blocks and taffrails gaily painted, sails covered from the murky grime, but ready to soar aloft and waft their way to limitless romance; and on board them men, quiet-eyed kindly men, fit and ready to meet any emergency in their little ships, who never grouse and do not know fear, who bear the impress of the sea itself.

For the progress of steamship building, the increase in size and speed of ships, and in the use of iron and steel in their construction, and the rapid development of that wonderful contrivance the internal combustion engine, startling and revolutionary as they appear to be, have yet very little altered the conditions of life for many hundreds of thousands of human beings who follow the sea. Notwithstanding the introduction of iron steamers in the trawling and drift-net fisheries of our own coasts, and the increasing use of steam and motors in handling nets and boats, the sail still holds its own bravely. The sailing fishing-boats of the world, and the coastwise traders, those cradles of maritime strength, still perform their part, almost untouched by the roar and rush of this age of machinery, still following the laws which have brought about their various developments. To them the romance of the sea is not past; rather it is infinitely increased by the presence of that new monster the iron steamship, roaming the seas and leaving sudden death so often in its wake. The old romance which made great and simple the hearts of sailor men, and marked them with its own impress, is still alive, still potent, pure, apart.

What is it in the sea life which is so powerful in its influence ? what is it which one meets there with such certainty, and which is not in crowded places nor in men's applause, not printed in newspapers nor telegraphed by Reuter ? It is in the laugh of the little child, in that look of the woman you love. It is on the bosom of the great river, in the breast of the wide moorland. It whispers in the wind of the veldt, it hums in the music of the tropical night. To some, it is borne on the booming night-notes of the deep forest, to others it speaks on the silent snow-peaks. But above all it is there to the man who holds the night-watch alone at sea. It is the sense of things done, of things endured, of meanings not understood ; the secret of the Deep Silence, which is of eternity, which the heart cannot speak.

It was the same to Ulysses and Columbus as it is to-day to the barge's skipper or the young fourth officer of a Liverpool tramp. The Northland fisherman, the Arab, or the young Malay have felt its extraordinary depth and intensity, and many a black-coated city man is the happier and sounder for having heard its silent eloquence. He has felt the tie that binds all seamen of different nationalities and climes and ages ; he has looked on the same mysteries, has heard the same music of the deeps ; and he has found the rest to his soul which the great silence of Nature brings to the seeker at all times, whatever his race or creed. I know that some of my old shipmates have met it, whether their skins were white or brown.

Yet even in the steamship this spirit still prevails. Indeed, no more remarkable survival into this age of steam of the old sea spirit, unstained, untouched by modern undisciplined ideas, can be quoted than the

British Navy. Notwithstanding all the influence of modern scientific development, with which, in all its branches, the Navy is more familiar than any other profession, it yet preserves intact the old naval traditions, and it is this fact which makes the Navy as it exists the most priceless jewel of the British Empire and the real bulwark of world peace. Beware, all landsmen who would meddle with that spirit of the sea! It cannot be intelligible to those who are not bred of salt water, for it is a product of the great ocean, and like it, unfathomable. It has created there a greatness scarcely realised, an efficiency and discipline which in the nature of things are impossible on shore, but at sea are put daily, hourly, to the test. For at sea, direct, prompt, cheerful, and fearless action are the first conditions of existence; simplicity of life, hardship and duty—a word too likely to be forgotten in high states of civilisation—are breathed with the very air; incompetence is never excused, and means certain ruin.

And that spirit goes shipmate with steam elsewhere too upon the seas, to the credit of steam and modern shipbuilding. The skippers and crews of our mine-sweeping trawlers and drifters, and of our cargo-carrying fleet, showed it in glowing colours, unforgettable to those who saw it, in the world war. The landsman, travelling by an ocean liner, may get a glimpse of it if he pauses to consider the steadfast figure on the bridge, or listens to the meaning of the patient screws beating out the knots astern. A thrill of pride in his own race may go through him when he sees the wallowing tramp slouch by, burrowing like a mole in the huge ocean banks and kicking the icy clouds of spray aloft to fatten her frozen decks, and remem-

ber how she ceased not upon her goings in the darkest days of war. His heart may feel a genuine glow to hear the stories of the deeds of the twenty-knot monster upon whose deck he stands.

But, if he be of understanding mind, something yet bigger will glow within him as he casts his eye towards the little coaster that rises now and then into view under reefed canvas, or the thirty-foot fishing-lugger, not as long as the smoking-saloon in which he sits, that he meets a hundred miles from land riding like a young gull over the ridges of the seas.

'You see often enough a fisherman's humble boat far away from all shores, with an ugly black sky above and an angry sea beneath; you watch the grisly old man at the helm carrying his craft with strange skill through the turmoil of waters, and the boy, supple-limbed, yet weather-worn already, and with steady eyes that look through the blast; you see him understanding commandments from the jerk of his father's white eyebrow, now belaying and now letting go, now scrunching himself down into mere ballast, or bailing out death with a pipkin. Familiar enough is the sight, and yet when I see it I always stare anew, and with a kind of Titanic exultation, because that a poor boat with the brain of a man, and the hands of a boy on board, can match herself so bravely against black heaven and ocean.' [1]

But the ordinary man is probably hurried on to some great city, forgetful of that other world of men of which he just touched the fringe, not knowing that he is passing by a quite other side of life, replete with human interest, characterised by unrewarded

[1] Kinglake's *Eothen*.

courage and unsung heroism, and rich in all the fruits which are ripened in men in constant contact with the greatest forces of Nature. For it is above all in the men who handle sails that the self-reliance which is bred by tempest, darkness, and the shadow of the Angel of Death reaches its highest point. The seriousness, from this point of view, of the loss of masts and yards to the Navy has been fully recognised, and it has only been reluctantly acceded to on account of the pressing importance of other more essential forms of training. But among the coasters and fishermen of the world, in spite of the new mechanisation of life, the mast and sail more than hold their own, and here the student of the sea will find himself in a by-path of the modern world, among the old thoughts, the old traditions, the old methods, and the old virtues of the great seas.

And when this civilisation shall have condemned itself and passed the way of others, the lugsail and the lateen will still be navigating the deep, conned by other races, but the same grim, great-hearted sailor men.

Combined with strong conservatism, there is along every coastline a singular ability to modify custom to meet new requirements, and a power of adaptation to different conditions which is perhaps unsurpassed in any pursuit of man. The study of the types of craft and rig which have been developed by different races under varying conditions becomes, from this point of view, one of absorbing interest and value.

There is nothing sordid, cramped, or unhealthy for body or mind in what a man may learn from sailing-boats. It is a subject, beyond most, shrouded about by the immensities which are the 'vesture of the

Eternal.' Leading into the solitudes of Nature, and into the presence of the Immeasurable, it must needs enlarge men's natures, in a degree impossible in much of modern Western life.

The man who handles sails must think for himself and act for himself. When the fisherman starts for his fishing-grounds, or the pilot turns homeward again, there is no coach-road along which he can drive a straight course. From the moment he begins to get his anchor, or leaves his mate, he must be tide-dodging and sail-trimming; his way he finds for himself across shoals and currents, by day with the aid of keen eyesight and good memory, and by night by the addition of an instinct for direction and a power for estimating relative speeds of wind, tide, and boat, which to the uninitiated are meaningless, and are only attained by long practice and possession of the sea-instinct.

Apart from the mere physical triumph which man has in handling tackle, there is for the sailing men the additional glory which is known to the explorer, the soldier, and the huntsman, which has made the wild nature life of the great continents exercise the enduring attraction which it does to the men who have lived the life—the glory, namely, of the pathfinder, the men who must seek the road, dare the experiment, keep a clear head, and understand a map more clearly than a picture—which things are hidden for ever from the man 'who is carried.'

But more than these others, while all his faculties are bent on picking up indications that help to whereabouts, which at sea are ever less easy of discernment than in any mountain country, he must be able to detach one eye for the direction of the ever-shifting

wind, one hand for the constantly needed handling of his ropes, and an added faculty or two for cheating or utilising the tide or the breaking seas, as the case may be.

And more than those others, too, he must be prepared to blow up his own fire, get his own meal, and make every one of a hundred possible necessary repairs, amid darkness, tossing, and cold flying spray, if called upon.

If any one would know to the full the meaning of these things, let him ship on board a Bawley boat from Leigh or Whitstable on an autumn morning, and with no chart, but with a lead-line and with the astounding memory of the skipper of the little boat, find his way down to the Gunfleet and back. In all that intricate network of sands and channels, given the hour of the tide, the depth and the character of the bottom as disclosed by the lead, a Bawley man will tell you exactly where you are, although, as in the case of an old friend of my own, he can neither read nor write, and has never seen a chart.

In such scenes you may know the glory of the pathfinder as truly as on the veldt, in the deep jungle, or in the wide north-west. In this desolation of the waters men find their brotherhood, as in all scenes where they grip hand to hand with great Nature.

The sailing-boat is one of the simplest and most universal of human machines—cleanliest, most delicate, most gentle, and amenable. It is a simple reduction to practical uses of the highest and most beautiful laws of physics, towards which all nations have contributed, according to their abilities and the local conditions to which they are subject. The man, be he Chinaman or Malay, in the Mediterranean or

Atlantic, who beats to windward through intricate channels against a lee-going tide, is staking his hand, eye, and brain, his whole concentrated intelligence, against Nature herself, turning against her her own laws. There is no 'as you were' at sea. A fathom too far, a little indecision, a mistake of judgment, or ignorance of a single detail, whether of the conditions of things beneath the water, or in the sky to windward, or in the rigging overhead, or whether of the eccentricities and behaviour under existing conditions of the boat, may result in disaster, with any result from a little loss of time and temper to total loss of ship and life. The punishment for inefficiency and ignorance, even though they be excusable or inevitable, never fails in Nature. But at sea it comes remorseless, fierce, and sudden; for the sea is a hard taskmistress, and teaches her lessons with no sparing hand.

The wide differentiation of type which is observable in boat-building has been the result of the efforts of different nationalities, and differently constituted minds, to meet the peculiar requirements of their own nautical surroundings.

A journey of a hundred miles along any fairly populated coast will disclose some variation in rig, or in build, or in both, prompted by some curious tradition, or necessitated by some meteorological or physical condition prevailing in the locality, and affected almost invariably by other considerations of an historical or practical kind.

Thus the directions and force of the prevailing winds, the character of the shelter available, the depth of water, the character of the 'sea' to be generally encountered, and of the waters navigated, the length of the voyages, the materials to be had for building,

the character of cargoes or methods of fishing, are all factors in the development of characteristic types. Though development and individual departure from strict type are always going forward, there generally remain certain well-marked peculiarities common to the type, sufficiently distinctive to enable the student to trace their descent back for at least several generations, and in some cases to a comparatively ancient date.

It is curious how many logs and cruises, written by otherwise observant persons, are barren of information on this subject. The traveller is at pains to describe at length the arts and crafts and histories of the peoples whom he meets with, but boat-building and native seamanship he passes by as of no importance and little interest.

The sailor relates in detail what he eats and what he does in his own ship; how he is wet or dry, or sleeps or wakes, sets sail or reefs; but so far generally as his narrative goes, his own vessel appears to be the only one upon the face of the waters, unless he happens to meet a pilot or a lightship or a yacht.

Yet the history of Mohammedanism, with its extraordinary influence on Asia and its tremendous consequences to Europe, is unintelligible without the dhow and the lateen-yard; while the Malay race as it is to-day without the prau could not have been.

These old-time vessels, the same to-day as they have been for centuries, have altered the history of the world. It has yet to be seen whether the age of steam will leave such permanent results upon the distribution of race and thought as have these simple sailing-boats, which have carried the crescent and the

sword, and navigated and deeply influenced all the quarters of the Old World.

Not less have the long clinker-built boats of the Northmen, and the strong, bluff-lined Dutch craft, been part and parcel of the history of modern Europe. Each in turn they have conferred that 'command of the sea' which was essential to enable the races who manned them to make and leave their mark on history. They each have helped to build up that empire of the seas which this country has inherited, and must retain, as long as she is to wield influence with mankind. They will probably outlive our fleets and our empire, as they have outlived the history which they made.

When our tall steamships are scrap-iron, and our cities, our literature, and our race are unknown except to a few learned savants, the Arab baggara and the Indian pathamar will be still thrusting their long snouts through the blue of the Indian Ocean, as they have done for two thousand years already.

Surely, then, the reeling Red Sea baggara, foaming before a fair wind, becomes a thing of living interest, to which any man may well doff his hat in reverence for the things it has accomplished, and the history it has yet to see.

The individuality of the sailing-vessel is one of its most remarkable attributes. It is seen to a lesser extent in the steamship, the locomotive, or automobile, and in the stationary engine; but in none is it so developed as in the sailing-boat, and of all the works of man none has served him so long, or ever wins so pre-eminently the confidence and love of its master and creator.

See her upon the stocks, in a Malay builder's shed,

in Canton or on the Clyde—how helpless in her own creation, a mere mass of material, a thing to all seeming inert and dead. Yet from the moment when she rides at anchor in the tide she begins, even in the way in which she snubs her chain, to show individual traits of character which are peculiar to herself, and which go on developing to the last day of her life. Storm and sunshine, wind and calm, breaking sea and rolling swell, go to make her, be she junk or barge, schuyt or lugger, and to build up that confidence and intimate knowledge of one another which lies between a skipper and his vessel, and upon which may at any moment depend their very existence. And so the boat goes on 'gaining continually in grace, strength, audacity, and beauty, until at last it has reached such a pitch of all these that there is not, except the very loveliest creatures of the living world, anything in nature so absolutely notable, bewitching, and according to its means and measure heart-occupying, as a well-handled ship on a stormy day.' [1]

The keynote of sea-life is the suddenness of its emergencies, the indescribable swiftness of its catastrophes, and the intensity of its calls upon the presence of mind and swift action of those who follow it. It is with a view to emergency, in the understanding of the certainty of Nature's passions, that every capable sea-going boat is designed, built, rigged, and sailed by every race. It is not the long summer evening or the steady trade-wind that the sailing-boat is built for. At sea, more than in any life of man, more even than in time of warfare, it is the worst that must be anticipated and prepared for. It is this certain knowledge of impending struggle which makes the

[1] Ruskin in Turner's *Harbours of England*.

sailor-man the alertest of mankind and the most patient; and it is the fatalism bred of the constant sense of danger which gives him the cheerfulness which shines most brilliantly in emergency, and must ever be a source of wonder and respect to those who are privileged to know it. Not only by the moment of danger, but also by those long hours of enduring patience and watchfulness which are nowhere longer drawn out than they are at sea, man and boat are moulded.

It is for such that the sailing-boat is built; it is in darkness, threading the mysteries of night, or when plunging into the unknown sea-valleys, heeling to the shrieking winds, that the true and living nature of a boat is manifested. It is then that man gains a new sense, exulting in the staunch bravery, the true spirit of duty, the unerring pluck with which the small fabric of man's making climbs the threatening crests, and steps up to the heavy-fisted squalls.

Truth, beauty, power, and obedience—they are all there, all necessary. That worn little craft with her coat of tar and her patched brown sails follows laws as true and as majestic in every line of softly-turning plank and bowing spar, of curving shadowed sail and tautened rope, as those by which the great cathedral stands, noble evidence of man's best aspiration, or the solid pier bars back the waters in proud witness of his highest achievement.

It is probably true that the degree of civilisation of any race is remarkably reflected in its boat architecture. The variety of its adaptations to the peculiar requirements of its waters is a measure of its appreciation of the value of the cheapest and most certain method of communication known to man, and

it is evidence of its ability to use materials at hand and fit them to its needs. The highest degree of civilisation in maritime races has always been marked by activity in boat-building, and by variety of design and rig. In no case has this been more notable than in the history of China and of Holland, and in the Adriatic in the fifteenth century, in Europe during the last two centuries, and in the United States since 1780.

The Negro, the American Indian, and the Slav, on the other hand, have never designed a sea-going boat or cut a sail. It has not been for want of waterways or of opportunity. It has been simply owing to a lower class of intelligence, and to that want of originality and enterprise which is the despair of the Negro race, has been the death of the American Indian, and will probably prevent the Slav from ever attaining to that influence in the world's history which at one time seemed likely to be his.

The navigation of the Northern and Eastern coasts of Africa has been in the hands of the Arabs from time immemorial. The dhow and the lateen-sail which are seen south as far as Zanzibar, are Asiatic, and not African. The defects which render it impossible that the Negro will ever attain to any degree of true civilisation, and which doom him to remain on a lower scale than the most primitive race of Asia, have also prevented his raising a noble building, thinking an original thought, producing any work of art, or building or sailing a boat of his own. The measure of his intelligence is the fact that he has never tamed the elephant, the most docile of living beasts, which no race of Asia, be it the lowest, has not tamed to its uses long ago.

The Indian of America, although a fine canoe-man, second to none upon swift rivers, has died without ever having hoisted a sail or got beyond the canoe paddle.

The Slav has less the makings of a sailor than either of the others, and though he may build land empires, the island races will always defy him to the end of time.

And for the reverse of the picture, take the finest sailing-coasters, the most powerful fishing-craft, and you will find that the inhabitants of the coastline they navigate are pre-eminent in courage or endurance, or in some branch of thought, or art, or manufacture, by which they will leave their mark among the races of the earth.

It is the sum of these things which goes to make harbours in many ways the most interesting places of the earth. Here the land and sea, the shore-life and the shipping-life, meet and mingle. Here may be read the character, the history, and the potentialities of the race; here may be gauged the extent of their enterprise and prosperity, in a way which can be done nowhere so well, not even in the capitals themselves. Who should discourse of the Harbours of the World will have a subject worthy of his pen, not less than of his brush. For he will deal with all history and the lives of the nations; and he may paint scenes second to none for beauty of form and colour. There is no place so full of ever-changing life and physical activity as a great harbour, or more replete with interest and suggestion to the mind. The coming and going of ships, linking it with ends of the earth; the endless incident and the changes and chances of wind, tide, and sky, all go to make harbour life unique, and to

explain the fascination which it contains for every English man and boy.

In the lives of most who have felt that fascination, deeper than all else beside, has generally sunk the recollection of some small fishing or coasting craft come in for rest and shelter from out the stormy horizon. The big-booted crew seemed to take on the shapes of old viking heroes, and the dripping little vessel herself, with her clean lines, tall spars, and brave high bow, is glorified in the memory by the mysterious air of power and daring which seemed to cling to her as she staggered in under reefed sails out of the wildness beyond.

Ruskin, in a notable passage which is too seldom read, has wellnigh touched the soul of the Boat Spirit :—

' One object there is still which I never pass without the renewed wonder of childhood, and that is the bow of a boat. Not of a racing-wherry, a revenue cutter, or clipper yacht ; but the blunt head of a common, bluff, undecked sea-boat, lying aside in its furrow of beach sand. The sum of Navigation is in that. You may magnify it or decorate as you will : you do not add to the wonder of it. Lengthen it into hatchet-like edge of iron, strengthen it with complex tracery of ribs of oak, carve it and gild it till a column of light moves beneath it on the sea, you have made no more of it than it was at first. That rude simplicity of bent plank, that can breast its way through the death that is in the deep sea, has in it the soul of shipping. Beyond this we may have more work, more men, more money ; we cannot have more miracle.

' For there is an infinite strangeness in the perfection of the thing as work of human hands. I know

nothing else which man does, which is perfect, but that. All his other doings have some sign of weakness, affectation, or ignorance in them. They are over-finished or under-finished; they do not quite answer their end, or they show a mean vanity in answering it too well. But the boat's bow is naïvely perfect; complete without an effort. The man who made it knew not he was making anything beautiful, as he bent its planks into those mysterious, ever-changing curves. It grows under his hand into the image of a sea-shell; the seal, as it were, of the flowing of the great tides and streams of ocean, stamped on its delicate rounding. He leaves it, when all is done, without a boast. It is a simple work, but it will keep out water. And every plank thenceforth is a fate, and has men's lives wreathed in the knots of it, as the cloth-yard shaft had their deaths in its plumes.

'Then also, it is wonderful on account of the greatness of the thing accomplished. No other work of human hands ever gained so much. Steam-engines and telegraphs indeed help us to fetch and carry and talk; they lift weights for us, and bring messages with less trouble than would have been needed otherwise; this saving of trouble, however, does not constitute a new faculty, it only enhances the powers we already possess. But in that bow of the boat is the gift of another world. Without it, what prison wall would be so strong as that "white and wailing fringe" of sea? What maimed creatures were we all, chained to our rocks, Andromeda like, or wandering by the endless shores, wasting our incommunicable strength, and pining in hopeless watch of inconquerable waves! The nails that fasten together the planks of the boat's bow are the rivets of the fellowship of the

world. Their iron does more than lead lightning out of heaven, it leads love round the earth.

'Then also it is wonderful on account of the greatness of the enemy that it does battle with. To lift dead weight, to overcome length of languid space, to multiply or systemise a given force, this we may see done by the bar, or beam, or wheel without wonder. But to war with that living fury of waters, to bear its breast moment after moment against the unweaned enmity of ocean, the subtle, fitful, implacable smiting of the black waves, provoking each other on, endlessly, all the infinite march of the Atlantic rolling on behind them to their help, and still to strike them back into a wreath of smoke and futile foam, and win its way against them, and keep its charge of life from them; does any other soulless thing do as much as this?'[1]

The pleasure-boat and the yacht form no part of the subject of these pages. Modern yacht racing has developed along special lines into a science in which quite new factors than those usually prevailing in shipbuilding have been gradually introduced. As was natural, a considerable literature has grown up with it, and the yachtsman will find no lack of capable books dealing with those sea-queens of steel, lead, aluminium, and hollow spars in which the modern racing yacht has culminated. The true cutters, the yawls, the ketches, and the schooner yachts, those beautiful craft which form the ever-increasing cruising fleet of the sea-loving yachtsmen, need a record of their own.

Nor in these pages is it intended to deal with modern square-rigged sailing, for this subject is an engrossing one by itself and needs to be treated by

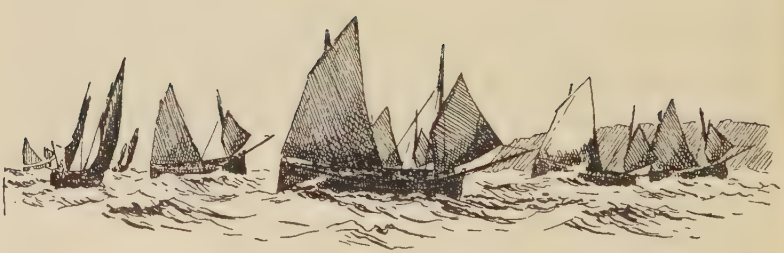
[1] Turner's *Harbours of England.*

the square-rig sailor. Modern square-rigging may be said to have come into existence with the development of the topmast and topgallant mast, which was a result of the adventurous and extensive voyages in the tiny vessels of the time by Columbus, Vasco da Gama, Cabot, and others in the early sixteenth century, which made an end of the monopoly of the seas by the Venetian galleys. It developed constantly through the period of the Dutch naval supremacy, through the wars which won for England the mastery of the seas against France and Spain, and through the period of the American competition for the carrying-trade which immediately preceded the introduction of steam and of iron ship-building. In fact, its development has scarcely yet ceased, inasmuch as double topsails and topgallant sails, and steel yards and masts, are an outcome of the later steel age, and are a production essentially of the last quarter of the nineteenth century. From the caravel of three hundred tons to the four-masted steel sailing-ship of six thousand tons measurement is a long step, and its history is an instructive and thrilling record of the enduring patience, the uncomplaining fearlessness, and the resourceful ingenuity in the face of difficulty, privation, and danger which have always characterised, above all men, the deep-water sailor. The square rig has found its historians and its illustrators, and its record has thrilled our hearts.

We tread a humble road and sail with the lowly worker. We turn where the modest coaster and the patient fisher-craft ply in the forgotten corners of the seas; whose homes are behind the rough stone piers and the lonely, wind-swept banks. Their hard-won wake we follow, not in the ocean highways, but by

rockbound cape and snarling, far-fetched shoal; not in the bright noonday, but in the bleak watches of the long night; not in the summer breeze, but in the fury of hammering gale and rearing sea. With them we hear the 'longshore seagulls' wail and the sad curlews' whistle. In their worn shrouds the cold land-wind harps to us; the thunder of the waiting breakers is about us. Their music, the singing of the coastwise tides, is ours too. There is death in that symphony, but it holds the great secrets in its keeping.

καλόν γὰρ τό ἆθλον, καὶ ἡ ἔλπις μεγάλη.



CLEARING THE LAND

IN THE KATTEGAT

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CHAPTER II

THE BALTIC, DENMARK, AND SWEDEN

The Baltic may well claim precedence among the seas as the boat-sailers' paradise. Not even the classical Mediterranean can surpass it in interest or beauty. While in the Mediterranean the sailor's mind goes groping back to reconstruct, if possible, the craft of Egypt, Phœnicia, or Rome, in the Baltic his eye may gaze upon the almost identical longships, or 'keeles,' which carried the brave Norse boatmen of old to build up nations in the West.

As the Mediterranean is the nursery of the high-peaked lateen, the parent of the longyard lugsails of the South, so the Baltic remains the sea of the storm-enduring squaresail, the parent of the short-headed lugsail of our Northern isles.

The one is the home of the silent, clean-lined, carvel build; the other of the strong, simple clench or clinker-build, first understood and practised by the wonderful old Norse boat-builders, and by them handed down, through the fishing-boats of the Northern nations, to our own time.

But while the interest of its strongly-built boats and the beauty of its wooded, rocky coastline exercise a peculiar fascination upon the voyager, perhaps the chief charm of the Baltic is in the kindly ways and

honest hearts of the hardy people living upon its shores and navigating its waters.

No nations of the earth can excel in charm and hospitality the Norwegians, Swedes, and Danes. What a voice these Scandinavian cousins might have in the world's doings if they would but settle their differences and agree to pull together! When navigating their seas and enjoying their hospitality, the Englishman can never cease to wonder why the present jealousy between them does not give way to the more generous

SQUARE-RIG KETCH. APPROACHING THE SOUND

rivalry which is produced by unity of policy. It is not too much to say that the British race, under similar circumstances, would have contrived some scheme of federation which would have enabled the three Norse nations to have presented a united front to the world, and been masters of the Baltic.

It is upon the water, as ever, that political or racial differences are forgotten, and the cruiser may be sure of a hearty welcome, and a friendly hand if he needs it, whatever nationality he may light upon.

It was once when beating up the narrow channel, scarcely twice our length across, into the little port of Landskrona on the Swedish coast, that our forty-tonner went a fathom too far, and as she came in stays, she took the mud and remained fast. A pilot came off, although it was blowing fresh, and eventually, after other efforts had failed, he took off a heavy anchor for us, by means of which we soon hove the ship off. He watched us get it in, and get way enough on our ship to come about again clear of the shoal, and thence go tacking up the tortuous gut, with evident satisfaction.

As soon as we were at anchor, and while we were still stowing sails, he came aboard.

'Good day, Pilot,' I said; 'what do I owe you for that little job?'

'Good day, sor,' he replied in excellent English, taking off his cap all round; 'I just come aboard to see you and look at the yacht; she was built over here.' We offered him supper, or a glass of grog, or a cigar, but he refused all, saying that he'd 'just like a bit of a yarn.' So a yarn we had, a good long one, about the ships he had sailed in, the ports he had visited all round the world, and about the ship, and what she cost to build, her rig, her speed, her virtues and her shortcomings, and an hour after he raised his cap and began to haul his boat alongside. 'Well, Pilot,' said I, 'what do I owe you for helping us get that anchor away?' 'Oh, that's nothing,' he declared, and he insisted that he only wanted a yarn 'and to look at the yacht again.' In vain we pressed money, food, and drink, and everything else we had on board upon him. As he pulled away in the darkness of the windy night,

he was still protesting that all he had wanted was a yarn.

Typical of the Norse temperament was my reception on my first visit to Copenhagen to see an old Eastern friend, Captain H. N. Anderson, for many years the managing director of the East Asiatic Company and the most honoured man in Denmark. I found a warm Norse welcome on arriving, and was beguiled down to the 'Free Harbour.' I felt some embarrassment when, having been led on board a fine 40-ton cutter yacht, *Viking*, lying in the basin, I was told: 'Here is your home while you are in Denmark!' It was some three weeks later beating up the Sound from Moën against a strong Nor'-wester under storm jib and two reefed mainsail that I learned the full extent of my old friend's hospitality. I was at the helm, and a certain cheery lieutenant of the Danish Navy sat just to windward warding off the sprays blowing over us with his oilskin to keep my eyes clear of water. The sense of comradeship grew apace as our gallant ship thrashed her way against the angry Baltic combers, smashing a great bow wave out to meet them to windward. With his arm around my shoulders he shouted in my ear: 'Do you know how he got this ship for you?' 'What do you mean?' I yelled. 'When he heard you were coming over, he sent for me, and said: "It will never do for him to come to Denmark and not have a boat to sail. Go across to Malmo or Landskrona; there are one or two good yachts can be had over there. Buy the best 40-tonner you can, telegraph me the amount, and bring her back before the week is out." That is how we got the *Viking* for you!'

These are typical of the seafaring men of the Baltic

Sea who, second to none, have drunk the deep sea spirit, and from some of whom, more than any of the sons of men, it has been my lot to receive kindness and friendship more disinterested, more unique, than I think can ever be met except among the men who have tasted in life the meaning of the great silence, and know it well.

Not less than the men, the craft of the Baltic form a never-ending source of interest, and have very well-

IN THE GREAT BELT

marked characteristics. With scarcely an exception the sharp stern is used in all the fishing craft, whether Finnish, Swedish, Danish, or Norwegian. Sharp floors, great beam, and considerable rake of stem and stern post, with wide flare forward, are the rule. The boats are nearly always clinker-built in wide strakes of great thickness, and when undecked they usually have high sheer. The materials used are oak or fir, and wooden pegging is much resorted to.

As regards rigging, pole-masts of very good height are usual. Where the old single squaresail has been discarded, the square-headed spritsail has generally been substituted (except in the larger vessels where the gaff mainsail is preferred), and the staysail added before the mast to keep the balance of sail.

In the small traders, in which the gaff and boom mainsail take the place of the spritsail, the dandy is, especially on the south coasts, the favourite rig. The

BALTIC DANDY

mizen is usually lofty and stepped well inboard, and its proportion often gives to the vessel the appearance of a cross between a dandy and a schooner, like the early nineteenth-century schooners on our own coasts. Besides the fore staysail, there are usually in these vessels two or three jibs rigged out on a long jibboom, and square yards and sails hold their own on the mainmast for favourable winds, and often even when sailing by the wind. As in the old Dutch galliots, which these vessels often much resemble, leeboards are

frequently seen, especially in the shallow waters of the southern coast. A peculiarly antique stern (like that of the King's cutters two centuries ago), with old-fashioned wooden davits carrying the dinghy over it, an overhanging bow with much flare, and prominent deck-houses painted in some light colour, give to these craft a character of their own, and help to make them comfortable sea-boats, notwithstanding the low freeboard of the waist when fully laden.

The fishing craft of the Gulf of Bothnia and Finland form exceptions to the usual run of craft in the Baltic in the matter of beam, and are proportioned much more on the lines of the Viking vessels, which they also follow closely in the matter of rig. Like the long 'Keeles' of the fifth century, they are nearly always open, and when, as in some of the larger and deeper boats, a shelter is provided, it is placed in the stern of the boat, instead of forward as is usual in fishing craft on our coasts. One reason is, no doubt, that the great height of the bow renders decking unnecessary and inconvenient; added to which the North men wisely like to keep weight out of the hollow-lined bows, and so assist their boats in being lively in the short seas prevailing in bad weather in the Baltic, to which this class of boat must often be kept head on.

The curved and elevated stem and stern posts of these boats remind one instinctively of the Viking ships, and they show how little in some respects the design and construction of those old builders has needed improvement. Like their forerunners, the boats are clinker-built of oak or fir. They are used for cod-fishing, and pull from six to twelve oars,

with long blades and heavy looms.[1] In some cases yoke lines are fitted in addition to the tiller. It will be noted that an almost similar type of boat, but of finer lines and finish, and slightly larger size, is used by the Norwegian cod-fisherman of the Trondhjem district.

The spritsail boats in Finland follow very generally the lines of the small open boats in use among the Norwegians and elsewhere, and do not call for special notice here.

Denmark

If, as the Danes affirm, the Swedes may be called the Frenchmen of the North, they themselves may at least be reckoned the English of the Baltic.

The peaceful inland scenery of their islands, their personal appearance, their enterprise, and their deep reliance upon the sea, are all essentially British.

As might be expected of an island race, using the sea so widely, they are splendid boat builders and boat sailers, and have developed a great variety of interesting types adapted to the peculiar conditions of the shores.

The boat-harbours of the Danish Isles consist generally of a couple of timber jetties filled in with big stones, built out on some shallows, or in a sheltered spot at the mouth of a fjord, and enclosing space enough to just hold the boats owned by the inhabitants of the scattered little wooden houses near by. Their entrance is often less than thirty feet across,

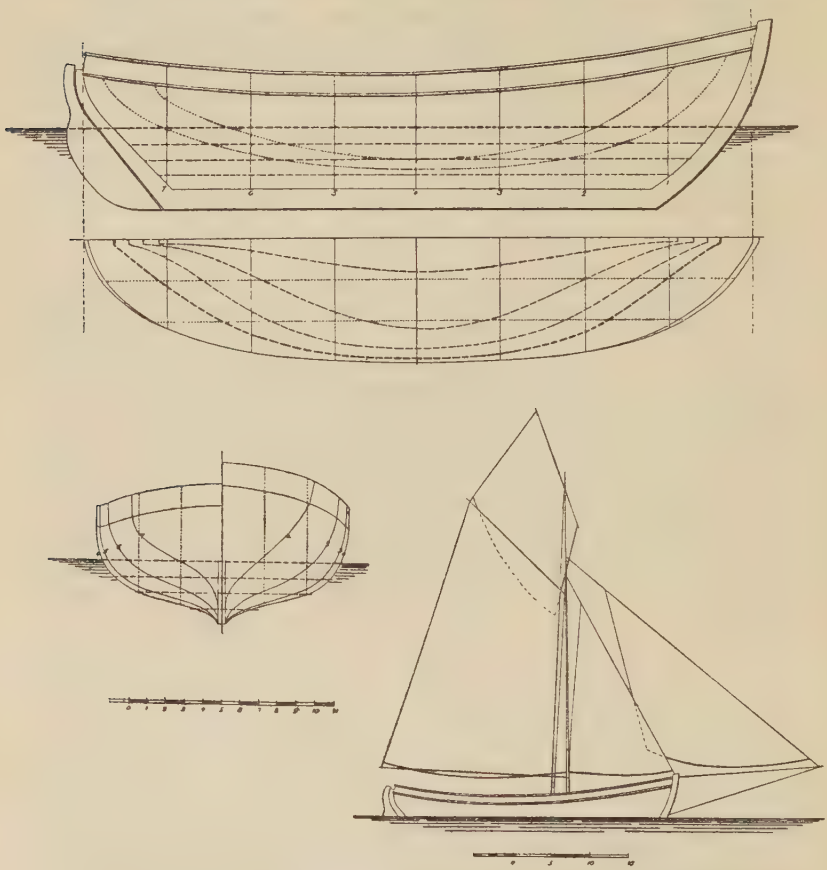
[1] The purely open boats of this type in the Gulf of Bothnia are about 29 ft. long, 5 ft. beam, and 2 ft. in depth, with a mast about 24 ft. length. The foot of the squaresail is wide, and is extended by a long boom. The half-decked boats are 27 ft. by 7 ft. beam, by over 3 ft. in depth, have a shorter mast, and a very square yard nearly the same length as the mast.

and there is generally not more than four or five feet of water in the haven. Getting under way or bringing up in these confined and crowded little harbours in anything of a breeze requires a quick eye and a handy boat. Even in the most exposed portions of the coasts there is generally one such harbour within reach, if one's craft does not draw too much. The abundance of small harbours, the untold miles of protected waters to be navigated, the charming scenery of widening, narrowing fjord, and the shallow soundings generally obtainable, all combine to make this portion of the Baltic a glorious cruising-ground for the adventurous small boatman. But he should follow the example set by the Danish fishermen, and never exceed a five-foot draught if he wishes to explore the most charming of the Danish waters.

Mr E. F. Knight, in his *Cruise of the Falcon*, has given a delightful description of the beautiful coast-line and its fishing population, and of the treacherous weather to which the lovely waters of the Baltic are subject.

For the open water work, the Danish boat-builders have succeeded in developing very powerful boats, considering the draught and size to which they are generally limited by the restricted size of their harbours; and in the wild autumn months they need to have stout craft under them even more than in the beautiful but treacherous summer days; for no sea changes its hue so quickly or so often as the wicked, wooing, smiling Baltic. And as the winter comes and the warning flakes of bottom ice commence to shoot upwards to the surface, boats and men together have many a long hard fight to get home from the clutches of the hungry northern storm-fiend.

For the even more exposed and boisterous waters of the Kattegat, and the western coast of the bleak promontory of Jutland, larger tonnage and greater draught is the rule, while for the eel and other shallow-



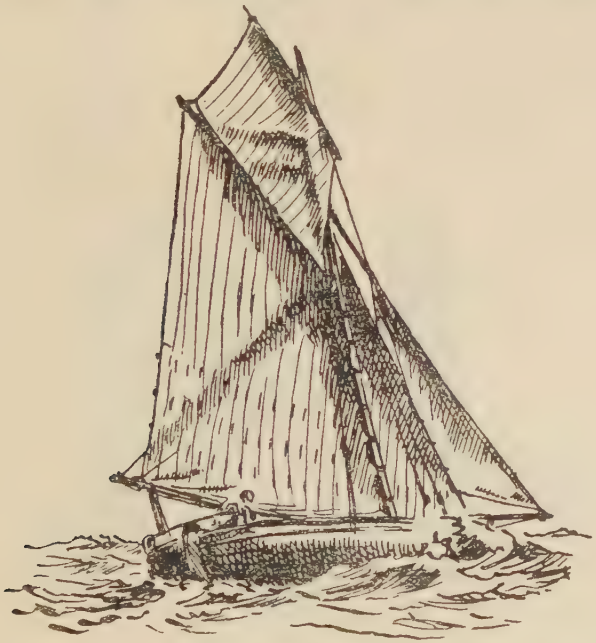
PLAICE-FISHING.—HORNBAEK BOAT, 36 FT. BY 13 FT. 8 IN. BY 5 FT.

water fisheries flat-bottom centre-board open boats have been much used.

The fishing-boats of Hornbaek, at the northern end of the Island of Siaelland, and of Skovshoved, on the east coast of Siaelland, in the Sound and north of

Copenhagen, will be probably best known to yachtsmen and seamen, the majority of whom, in vessels of any draught, pass through the Sound in going and coming.

The Hornbaek boats are very characteristic in build, and follow the usual rule of being stem and stern alike and clinker-built. They have consider-



OFF ISE FJORD

able sheer, and remarkable flare on the bows and quarters. The stern-post is very raked, and the top is rounded up and cut off, in a manner peculiarly Norse, below the top of the rail, the tiller passing through an open cut in the bulwark, and beneath the rail, which is carried right round. They are cutter rigged, having gaff and boom mainsail and yard topsail set on the pole-mast.

They are decked in, and are fast and beautiful sea-boats. They are used for plaice and other fishing in the Kattegat.[1]

Almost identical with these boats, in build as in rig, are the sole and herring boats of Lynaes and Hundested, at the mouth of the beautiful Ise Fjord. They have less sheer, less draught, a trifle more beam in proportion to their length, and a lower rail than

KATTEGAT PLAICE-FISHING BOAT

the Hornbaek boats, but like them they have to face plenty of bad weather in their fishing-grounds around Anholt and in the southern part of the Kattegat. Owing to their shallowness and enormous beam, and their peculiar dish-like section, these boats, when

[1] Approximate dimensions: Length, 36 ft.; beam, 13 ft. 8 in.; draught, 5 ft. In most cases the dimensions of the Danish boats are taken from Captain C. F. Drechsel's admirable work on the Danish fisheries.

under way, really appear to be all deck, and to have scarcely any side at all. They are wonderfully buoyant dry craft, and their motion in a sea-way is quite peculiar and strange to any one accustomed to deeper narrower builds.[1]

A number of these boats weathering a nor'-wester

FISHING SLOOP, ISE FJORD

form a sight which no one who has been privileged to see it can forget.

Another craft, almost similar in every particular to the types just mentioned, except that she is larger and is dandy-rigged, may be here referred to as hailing from Frederikshavn, at the north-eastern

[1] Length, 32 ft. 6 in.; beam, 13 ft. 8 in.; draught, 4 ft. 6 in.

extremity of the storm-swept Jutland. This boat is also used in the plaice fishery in the Kattegat, and is, as is very necessary, a powerful sea-keeping type, of very strong construction. The mizen, behind which is the steering-well, is often a flat-headed spritsail, and the mainmast is fitted with a topmast. Such a boat would form an ideal rough-weather cruiser.[1]

Plaice, sole, and turbot form an important fishery, and besides the trawl, and shore and deep-water bottom seine nets, spiller lines and tramel nets are used all round the coasts. These fish mostly frequent Anholt and the Aalborg banks, Ise Fjord and the head of the Sound, and some spots on the west coast.

The Skovshoved herring-boats, in which may be included all boats engaged in this important fishery, sailing from the small harbours of the Sound, as far south as Faxe Bight at the south-eastern end of Siaelland, are much smaller in size and are only half-decked. The curve of the stem-piece is very marked and gives a very rounded forefoot. The stern-post is as usual very raked, and above the waterline makes that curious elbow, or forward curve, which is characteristic of the majority of the Danish boats, and is more developed in these boats than in any others. They carry their beam well aft, especially above the waterline, where there is great flare. The deck plan is peculiar, the little cuddy which does for a cabin, and has just room for two men to lie down for an occasional spell, being placed aft at the quarters just before the tiny well occupied by the steersman. The boat is open amidships as far as the mast-thwart, with wide waterways along the sides.

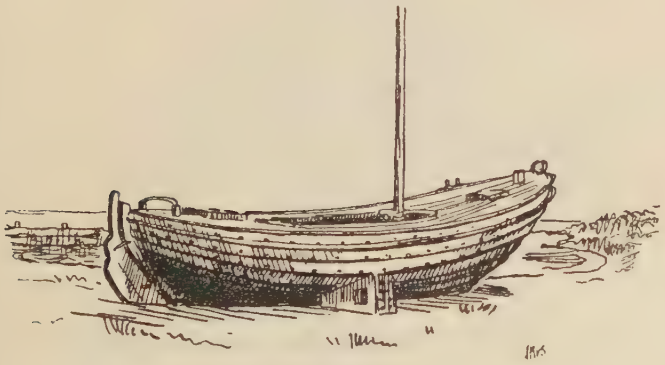
[1] Approximate dimensions: Length, 42 ft.; beam, 15 ft.; draught, 6 ft. 6 in.; tonnage, about 24.

In a boat sketched at Vedbaek these waterways gradually narrowed forward until they vanished at each bow, where the boat was entirely open—eloquent

VEDBAEK BOAT

witness of the lifting power in a sea-way of the rounded forefoot and high-flared bows of these boats.

At the pretty little harbour of Rodvig, however, the boats were mostly decked before the mast; no

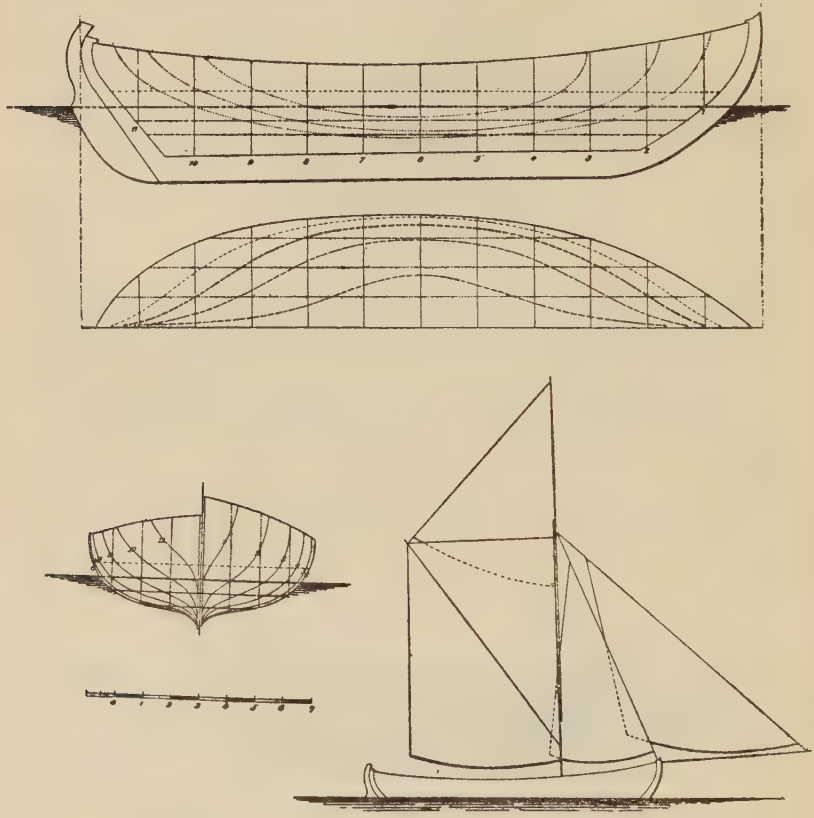


RODVIG BOAT

doubt owing to the very nasty sea to be met with here, away from the shelter of the Sound, especially when a strong south-east wind is blowing on to the shallows of the Faxe Bight.

These boats are from 24 to 25 feet long over all

(22 to 24 L.W.L.), and 8 to 9 feet beam (the beam more often than not exceeding one-third of the over-all length), and have from 3 feet to 3 feet 6 inches draught. The mast is stepped well back, 8 to 9 feet from the bows, and is a stout spar standing 21 to 24



SKOVSHOVED HERRING-BOAT, 24 FT. BY 8 FT. BY 3 FT. 2 IN.

feet from the deck. The mainsail is a flat-headed spritsail. The spreet, standing at an angle of about forty-five degrees with the mast, is about 22 feet long, and its end stands a little below the line of the masthead. In its cut and proportions the sail is

directly opposed to the principles usually followed in the fore and aft mainsail, the peak standing lower than the throat, and the foot being several inches shorter than the head, so that the leech stands up and down, the peak standing over the clew. The shape is, at first, by no means taking to the eye accustomed to well-peaked sails, although it undoubtedly results in a very flat-setting sail when

OPEN SKIFF

close hauled; and it is quickly and easily reefed, and can be reduced to very snug proportions in a blow.

The foresail is a big powerful sail running on the stout forestay. Like the mainsail it is generally tanned, and together they form the working rig of the boat. A light triangular or jib-headed topsail hoisted on a long spar and a large jib set on a light-running bowsprit are used in fine weather. It is

noticeable that the Danish fishermen, like the Norwegian pilots, hold on to the fore staysail when it blows, although the British smacksman takes it off before any other lower sail when there is any weight in the wind, and prefers his small third or storm-jib which, as he says, presses down a boat much less than the staysail, and has far more lifting power. The Dane or Norwegian, however, owing to the great beam of his boat, feels the pressing influence of a staysail far less, while in his high-flared overhanging bow he has all the lifting power he requires. It is curious how, for racing purposes, we are coming back in this country, as they are in America, to greater beam and greater overhang and flare forward.

Both mainsail and foresail have generally three rows of reef-points in them. The mainsail is held by a rope lacing to the mast. It is stowed in a bunch on the mast, and when set is first hoisted well up by the main halyard and then hauled out to the spreet-end by the out-haul.

When brailing up the out-haul is let go and the two brails are hauled upon, the peak and head of the sail being thus brought down alongside the mast. The sail is never brailed up at the throat while standing on the spreet, as is always done in the Thames barge and other sprit-rigged boats in England.

A very handsome type of little cutter comes from the neighbourhood of Nystead in the Isle of Laaland, less peculiarly Danish in type, and having a transom-stern and much straighter stem-post. She is flatter floored and more straight-sided than those already described. She has a lofty pole-mast and standing bowsprit, and is used for the herring net-fishery.[1]

[1] Length, 26 feet; beam, 9 feet; draught, 3 feet 6 inches.

The herring fishing extends all through the quiet Belt as well as the Sound. Stake-nets are extensively used along the shores, especially in the spring fishing,

SPRITSAIL HERRING-BOAT

while the greater part of the autumn catches are made by drift-nets.

The solitary island of Bornholm, lying in the Baltic, has some good boats of its own. The open boats used for the important herring and spring salmon fisheries are dandy-rigged, the main and mizen sails being spritsails with a slight peak to them, but still very straight leech. A yard topsail is sometimes carried, and is set on a kind of sliding-gunter topmast passing through a cap in the usual way, the heel of which comes down to within reach of the deck, often clipped into the spreet. The raised stem and stern posts are very straight. They are mostly 22 feet long and 8 feet beam, and about 3 feet 8 inches internal depth.

The larger decked boats used in the salmon fishery are of the sharp-bottomed wide-flared build, very like the smaller Skorshoved boat. Forward the stem-head is carried up some three feet in height, reminding one much of the Gulf of Bothnia boat. From here an open rail runs right away aft to the quarter. A small deck-house aft gives a peculiar appearance to the boat. She is a pole-masted cutter, the mainsail having no boom, and being sheeted to a horse inside the stern, in front of the helmsman's little cockpit.[1] The perpendicular line of the leech and the very square head of the gaff topsail are not at first prepossessing.

The salmon frequent several of the shallow fjords of the islands, and are caught in large numbers off Bornholm on the west, south, and south-eastern sides. The drift-net is largely used, and floating hook-lines are set in deeper water outside.

In the shallow fjords among the islands, in the Little Belt, or up the flats of the Aalborg banks on the eastern coast of Jutland, flat-bottomed open skiffs, as usual stem and stern alike, are used for eel and plaice and other shallow-water fisheries. They are fitted with leeboards or centre-boards, and rigged in one or other of the usual fashions.

All these shallow waters of the coastline bear witness to the ingenuity of the local fisherman in the multitudes of stake-nets and basket-work traps with which unwary herrings, eels, and flat-fish, and even more sagacious deep-water fish such as cod, are beguiled. Not even the much-staked waters of the

[1] These boats run to about 33 feet long, 11 feet 6 inches beam, and 4 feet 6 inches draught aft, and 4 feet forward.

tropics can compete with the Baltic in the multiplicity and variety of these contrivances.

While the principal scenes of the herring fishery are in the Kattegat and through the Great Belt and the Sound to the shores of Bornholm, the cod and haddock frequent mostly the west, or North Sea, coast of Jutland, and the boats used in this fishery are large, powerful craft. Some of the regular North Sea dandy-rigged smacks are now used in this fishery with counters and straight stems, but the visitor to the little port of Esbjerg will find plenty that is novel and interesting in some of the stout cod-line boats lying there, or in the beamy little traders from the south. A typical Danish type of boat used here is about 37 feet in length, 13 feet 9 inches in beam, and over 6 feet in draught. She has a curious turn up to the stem-head, not unlike the snub-nose of some of our modern racers. She is, as usual, stem and stern alike, but has full rounded ends and sharper bottom than is usual. She is cutter-rigged with gaff and boom mainsail, standing bowsprit and topmast of very English proportions.

The open boats are spritsail-rigged, with an also much more familiar shape of sail. They have straight overhanging stem and stern posts, and a great deal of flare and sheer, and are very round at the gunwale at each end. They run up to 26 feet by 8.

In this fishery, which is carried on in many spots round the eastern Jutland coast, and among the islands, as well as out deep in the North Sea, the hook and line is much used, while stake-nets and traps are used in the Belts, and in the more sheltered shallow waters of the main islands.

Sweden

Perhaps the most characteristic feature of the Swedish boat-builder is his love of beam and solidity.

SWEDISH FISHING-BOAT

No stronger, finer sea-boats are to be found than some of these Swedish fishing craft.

The open boats used in the cod and herring net fisheries are, in their way, perhaps the most remarkable craft afloat. Their characteristics are monstrous

beam and great strength. For a length of 17 feet some of them have a beam of 13, and yet, owing to the beautiful curves, there is no sense of awkwardness about them. They are clinker-built, with sharp floors and raking stern-post, and carry one large spritsail. The head of the sprit, instead of being pointed for fitting in the grommet at the mast, is generally forked.[1]

The big-decked Swedish mackerel boat is not less remarkable. That she is clinker-built, stem and stern alike, and has a very raking stern-post, and great beam, goes without saying. She has hollow floor, and a deep heel, and is about the strongest and most powerful sea-boat of her size in the world. There is a double rail all round. She is dandy-rigged, with the sprit, mizen, and main sails familiar in the Danish and Norwegian boats, and a very long topsail-yard running up and down the mast, sliding-gunter fashion.

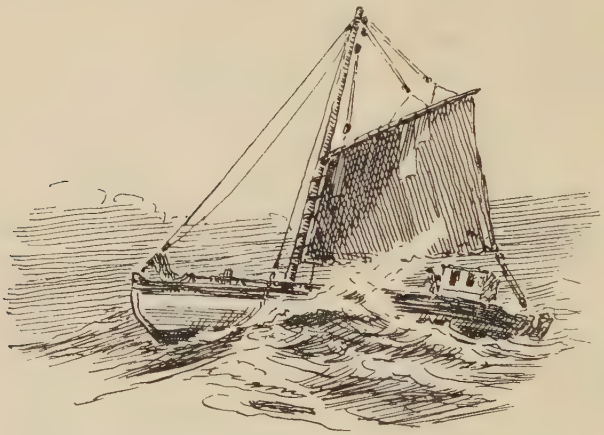
The mast being very stout there is, as usual, very little rigging, there being a single stay on each side, and no runners.

There is a threefold sheave at the masthead to accommodate the mainsail, spreet, and fore staysail halyards. The mainsail is set by hauling out on the standing-spreet, as already described in the Skovshoved boats, and is brailed down in the usual Scandinavian manner to the mast. It can be reefed down very small. The sheet travels on a horse. The mizen has no standing rigging, and has a double sheave at the masthead, through which are rove the mizen-

	Length.	Beam.	Depth.
[1] Dimensions—	25 feet 8 inches	9 feet 10 inches	3 feet 3 inches.
and—	17 „ 0 „	13 „ 0 „	4 „ 0 „

sail and mizen topsail halyards. The sheet leads to a wooden bumkin over the stern.[1]

Of the very remarkable square-rigged cargo-carriers of the inland waterways about Gotenburg I have unfortunately no experience. That they are able to hold a very close wind is apparent even to the hurrying railway traveller, and they will probably amply



MOTOR FISHERMAN

repay the investigation which I hope one day to give to them.

Into all these distinctive types the marine motor engine is making inroads with giant strides. The Norse people as a whole have been very quick to detect the advantages of the motor in the fishing industry both in working nets, in making rapid trips to and from the fishing ground, and in extending their radius of action. Diesel and semi-Diesel types

[1] Small boats of this type are also built.

	Length.	Beam.	Depth.
Dimensions—	36 feet	17 feet 0 inches	7 feet 5 inches.
	28 „	9 „ 10 „	3 to 4 feet.

are favoured in the North. At first the tendency was to use the new mechanical device as an auxiliary to the sails, but it is now assuming the position of senior partner, and the sails are becoming accessories which are only necessary as a stand-by, and which once the engine is running are seldom used except to steady the ship in bad weather. Covered-in deck-houses begin to grow as excrescences to protect the wheel-man from the weather and enable him to steer a steady course. The hulls are still true to type, but it is probable that they will become standardised as time goes on. The motor fisherman can go further afield in a shorter time than the old sailing craft; but initial cost and running expenses mount, and in the matter of costs, sail can still put up a strong case, especially if the motor be kept as a true auxiliary of low initial cost and power, to be used sparingly only in very light weather or in entering or leaving port.

UNDER THE LEE OF KRONBORG

CHAPTER III

NORWAY

The destiny of Norway remains, as it always has been, upon the sea.

Two-thirds of its population live upon its wondrous coastline. The value of the fishing-trade alone amounts to 10 per cent. of the estimated total national income; and of the trade of the country, local and foreign, 95 per cent. is carried upon the water. The rugged character and comparative poverty of the country inland has obliged the Norwegian race always to turn its eyes seaward; and to this day, as in the dawn of history, the young Norseman looks down the fjord towards the open sea, and sets there the dream of life before him. The history, the art, the poetry, the commerce, and even the politics of Norway all speak the influence of the ocean upon the character of the nation, more potent even than that of the mountain, the forest, and the snowfield. And may this not in large measure be the explanation of the singular attraction which the Norwegian people and scenery exercise upon many of our race? To many a wanderer there is nothing so clean and bright in memory as the little log-built Norwegian village, nestling among the rounded granite blocks, lapped by the ripples from the blue waters of the fjord, and redolent

THE NORSE LIFE SAVER

of the wholesome pine-forest which girds it about on every side towards the hills.

It is not surprising that Norway should present some well-marked and distinctive types of craft. Small steamers have, very naturally, within recent years almost monopolised the coast carrying-trade, and in so doing have put out of work the old sailing-

OLD STYLE COASTING SLOOP

sloops [1] and square-rigged Nordland jaegts which formerly were so characteristic a feature of the Norwegian coastline. Steam has also been introduced into the whale fisheries of the north, and to some extent into the cod and herring fisheries. But the great bulk of the cod and herring and local fisheries

[1] The *Gjöa*, in which Amundsen navigated the North-West Passage in 1903-1907, was one of these staunch old sloops.

of the country, the pilot and other local services, continue to employ and develop sailing-craft, with, in these days, the motor added, tending to increase in horse-power. The two well-marked types are the high-sheered, square-rigged craft of Finmarken, Nordland, and the west, and the deep, decked, fore-and-aft rigged boat of the south. The former displays the characteristics of the old Norse 'longship.' Like

NORDLANDS JAEGT

her, she is generally a clinker-built, double-ended, open boat, and a wet ship to face the winter seas in, by reason of her low freeboard. But the Norse fisherman of to-day retains the same faith in his open boat as did his forefathers, and, as that plucky sailor Bjorn sang of old—

'Salt is in my eyes,
They are bathed;
My strong arms fail,
My eyelids are smarting,'

so the herring and cod fishers weather the northern gales with no shelter but the weather gunwale of their open boat, and with smarting eyes and tired arms bail for their lives with the same cheery spirit.

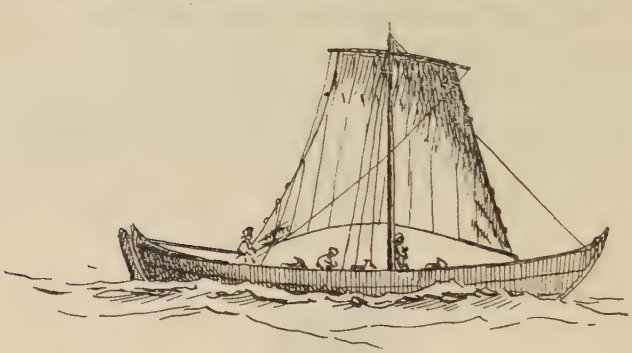
They credit this old type of boat with marvellous sea-going qualities, and by reason of the faith that is in them, and their own strength and skill, have made

NORDLANDS COD-BOAT

this simple old-world boat the trusted companion of their sea wanderings.

The secret of the Nordland boat probably lies in the extreme lightness of the ends, which makes her lively in a sea-way, and in her handiness under oars; for, shallow as she is, and narrow in the beam, she has none of the qualities of a steady-going sea-boat. Her life in bad weather depends upon the handling she receives. The most feminine of boats, she demands a

real man for her helmsman, who knows his own mind and has a strong hand to effect his purpose. Capricious,



STRILEBAAD

quick, seemingly, to betray her charge, she yet loves to be ruled strongly. It is only this she wants; and once she finds that she has her master, she will take

OPEN FIVE-OAR HERRING-BOAT

him through the wildest winter night in safety, yet not without throwing more water than is either seemly or safe.

The characteristics of build are shown quickest by a drawing. The planks are stout, few, and wide. The width is often as much as 16 inches in some parts; the ordinary five-oar herring-boat has only five to her side, and the smaller boats but three. The ends have great sheer, the sides great flare, necessitating in many cases a waterway inclined sharply in-board and carried from the quarters to each bow,

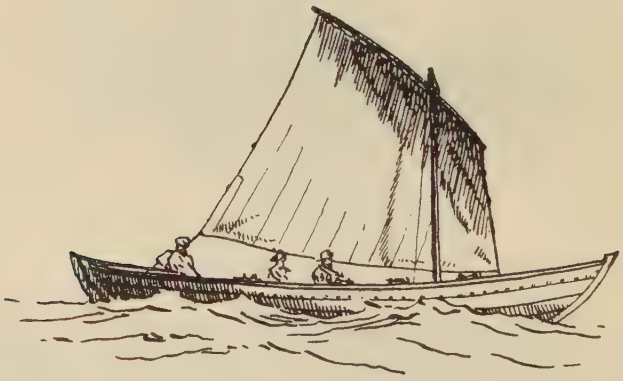
NORDLAND BOAT, DEEP LADEN

upon which the wooden oar-thowles are usually fixed. A wash-strake is fitted to some of the herring-boats when deeply laden with nets or fish. In the larger boats used for winter fishing, a small cabin is arranged aft by building a bulk-head across at the quarters, raising the gunwale and decking in to the stern. Here a stove and bunks are fitted, and some protection from the weather is obtained. All these boats rely chiefly on oars for progress to windward,

having very little grip for weatherly work. They carry a crew varying from three to ten men, and

SÖNDFJORD YAWL

range from quite small boats to 50 or 60 feet in length.[1] They are fast-reaching, running or pulling;



ARENDAL YAWL

but for beating are to all intents and purposes mere rowing-boats fitted with mast and sail, and are generally obliged to wear instead of tacking.

[1] A herring-boat 33 feet 6 inches in length has the following dimensions:—Beam, 8 feet 8 inches; depth, 2 feet 8 inches; mast, 23 feet 3 inches; yard, 11 feet, with from four to ten oars.

The types vary slightly on different parts of the coast. The Söndfjord boat on the west coast, for instance, is almost similar to the five-oar herring-boat depicted, but has more rounded stem and stern, lighter ends, and is a deeper and therefore better sea-boat. The Söndmöersk boat is another peculiar variety, with heavy ornamental stem and stern posts, and very peculiar construction of timbering. She carries her mast stepped amidships like the others,

SÖNDMÖERSK BOAT

but is rigged with a short yarded and peculiarly cut lugsail. Around Arendal another class of lugsail boat is used, very like the Shetland boats, and generally known to British sailors as the Norway yawl.[1]

Most of these boats have the long tiller and yoke which is necessitated by the high stern-post generally adopted. The ancient Norsemen got round this diffi-

[1] The word yawl, or 'yol,' seems to be generally used by the Norse peoples for any small 'double-ended' craft.

culty by hanging the rudder upon the starboard (stjornbordi) quarter, a system which was generally followed until very modern times, and is still in use extensively in the East.

As already hinted, the rig is very simple, and consists of a single pole-mast stepped nearly midships, on which is set an ordinary squaresail. Like her lineal descendants the ' keel ' of our own east country waterways, the Nordland boat carries a small topsail, and the proportions of this sail in the two craft are very similar. By means of bowlines carried to the stem-head a very flat set to windward can be obtained. Two rows of reefs along the head, and one along the foot, are the rule. A stout forestay runs to the high stem-head, and is fitted with a purchase for hoisting the mast up with, and shrouds and backstay runners are used in the ordinary way. The main halyard leads through a sheave below the masthead, and is led down aft to a powerful purchase. The old-fashioned and very effective rib and truck parrell is used to keep the yard to the mast. It is the most efficient form of parrell known to square-rig sailors, and never jams.

The old Nordland ' jaegt ' which formerly did so much of the coast-wise trade of Norway was rigged in a precisely similar manner. Owing to the comparatively large tonnage of the vessel her gear was proportionately heavier. The pole-mast was a very heavy spar, supported by four shrouds on each side, and by topmast stays, backstays, and a stout forestay and fore topmast stay. The sail was reefed by means of bonnets along the foot, four or five deep, so that close-reefed it formed a handy little sail. The main halyard had a very powerful purchase which led down to the

forepart of the high poop, much as in the Arab bagala of the Indian Ocean. A fore staysail was occasionally used. The most characteristic feature about these high-sailed, broad-beamed old vessels was the stern, which is quite a reminiscence of two centuries ago, and may still be seen in many of the trading-sloops and other small fore-and-afters of the Baltic.

Coming to the southern coasts of Norway, the most characteristic type is the old ' Hvalor-baad,' which is very closely related to the Swedish and Danish Baltic

OLD HVALOR PILOT-BOAT

craft, and from which has been developed the modern pilot-boat and the sailing lifeboat (Redningskoïte). The hvalor-baad is the most masculine of boats, and in every way is the direct opposite of his Nordland sister. Bluff, broad, strong, and deep, he will face any weather; he has no good looks to boast of, but is singularly quiet and steady at times when his sister of the north would be cutting capers and longing for the nearest port to leeward. While she is being coaxed and compelled to behave herself by six or seven

strong men, the hvalor boat will be standing out to sea with one hand in the tiny cockpit, or having put

NEW HVALOR BOAT

his pilots into inward-bound ships, will find his way home a hundred miles or more all alone, except for

TRONDHJEM 'LIFEBOAT'

the boy, who appears to be carried rather for sake of company and out of respect for the prejudices of

sailor men than for any help he can really give the hvalor boat in getting home.

In common with some of the broad Danish and Swedish craft, this boat has remarkable characteristics. Owing to the great beam, the motion in a seaway is most peculiar; there is a sort of 'I'm not going to be put out, or knocked about, or splashed'

PILOT

sort of way of going through a sea, which would reassure the most timid landsman. Easy to handle, quick and light to steer, sure in stays, snug and stiff in a squall, and very fast, this kind of boat is the most comfortable for cruising purposes that I have ever worked.

As will be observed, the rig is very simple, and

consists of a stout pole-mast stepped well back in the boat; the somewhat ugly, square-cut Norse spritsail, with peak lower than the throat for mainsail, and a stay foresail, the sheets of both generally travelling on horses.

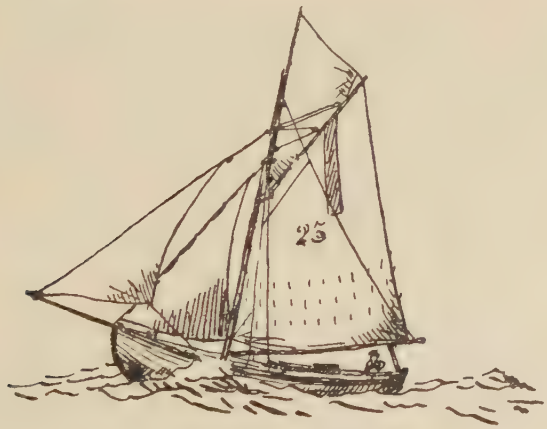
There is next to no rigging, a single stay on each side with the forestay being all that is required. The mainsail has a rope lacing to the mast, and is set up by hauling out to the spreet end. A three-corner topsail set on a long yard which stands up and down

SNAEKKE OR SKIFF, CHRISTIANIA FJORD

the mast, and a jib set on a running bowsprit, complete the fine-weather outfit.

The hvalor boat does not pose as one of the aristocracy of the sea, but he is one of the sturdy upper classes who do good work in life. No boat has more truly the instincts of the gentleman of good old family, and one can imagine with what satisfaction the old hvalor boats which are still left snub their anchor-chains, and chuckle to the ripples lapping about their sides, when they see their big-bodied, handsome-looking offspring, the modern lodsbaad, passing in or out to sea.

The 'lodsbaad' or pilot-boat now built is an improved hvalor-baad. It is an interesting and significant fact that the improvements which have been effected in the lines of these boats, and in their speed and weatherliness, are largely due to a countryman of our own, Mr Colin Archer, who has long been settled at the little port of Larvik, and who has made an undying name for himself as the designer of Nansen's ship the *Fram*. Norwegian fishermen owe him



OFF CHRISTIANSAND

a great debt for the manner in which he has devoted himself to the improvement of these classes of vessel.

Following the law of development which is rendered almost universal among types of sailing-boats by the ever-increasing demand for speed and for greater sea-keeping capacity, the pilot-boats have increased steadily in size. This, as in the case of the larger Danish boats of the same sort, has necessitated the substitution of the gaff and boom mainsail in place of the old spritsail, the spreet in vessels of such tonnage being a heavy unhandy spar in a rolling sea,

involving serious danger in case of the heel becoming unshipped from the grommet. Main and foresail are the sails usually carried, the jib and topsail being fine-weather adjuncts. The boats carry outside ballast, and are always fully decked. Owing to their roominess they are very comfortable below, and in them their crews can literally face any weather that blows, even in the terrible Skagerak.

Redningskoïte [1]

In 1892 a society was formed for saving the lives of shipwrecked mariners. This society has found a wide field for its operations principally among the fishermen on the north and west coasts of Norway, who collect in large numbers during the great cod and herring fisheries, which, as already explained, take place largely in the middle of winter, and in open boats.

The lines given in the accompanying diagrams represent the type of boat which has been found most suitable as a life-saving boat among these fishermen, being remarkably handy, able to stay out at sea in any kind of weather, and powerful for towing smaller boats to shore when caught in a gale off the land.

The society first built over fifteen of these 'Skoiter,' and there was a constant call among the fishing population for more of them.

A 'Redningskoïte' is very strongly built. The stem and stern post, outer planking, rudder head, stanchions, combings, and other principal parts are oak. The frames are double, built of 'grown' yellow pine, the floors running across the keel and consisting

[1] For the description and lines of these boats I am indebted to Mr Colin Archer.

of the stem and root of the tree. Between each frame is fitted a steamed and bent oak rib which is riveted to the outer planking. They are carvel built. The fastenings of the outer plank to the frames are wooden tree-nails (juniper) and galvanised iron spikes above water, metal spikes under waterline. Decks 2-inch pine. Inside the frames is worked a water-tight lining from gunwale to the cabin deck, which is likewise water-tight and firmly fixed, so that if the outer skin is stove the boat will float on the lining. There are four water-tight bulkheads. The cockpit or helmsman's compartment has water-tight floor and sides, and is sometimes furnished with self-clearing pipes leading out-board. The crew consists of four hands.

The sail plan explains itself. It is designed for strength and handiness. The strongest canvas and best rope and blocks are used. This is of the greatest importance. No instance has occurred of these boats being forced to seek shelter from stress of weather, although they frequently stay out in heavy gales all night and in the middle of winter. The chief danger seems to be the giving way of some part of the gear.[1]

It will be noticed that these boats retain the characteristic shape of the old hvalor boat, but that, in common with so many growing types of the present day, they have, with their increase in size, taken to the handy ketch or 'dandy' or 'smack' rig, as our fishermen variously call it; they have become carvel built; and like the lodsbaad they have adopted the modern speed-giving device of outside ballast.

[1] The iron keel weighs about 6 tons, and is fastened with 12-14 galvanised iron bolts 1½ inch, set up with washers on the keelson. The boat carries about the same weight of iron ballast inside, stowed under the cabin floor. Displacement about 26 tons.

In 1894 I built a half-decked 22-foot boat in Siam, very much, oddly enough, after the lines of the modern Redningskoïte. In this little craft I travelled long distances in the Gulf of Siam, and I can vouch for the splendid sea-going qualities of such a boat.

It will be noticed that although the ends are well raked, there is no excessive cutaway, and the large proportion of straight heel enables the boat to lie well

BREVIK SKIFF

to the wind and run a steady course, both important points in a sea-going vessel.

Of the larger boats it remains to mention the Bankfiskerskoïte. A deck fishing-boat so named has long been used for open-sea fishing off the west coast of Norway. The design sent me by Mr Colin Archer is only one of many models used, each builder having his own style. Several boats have, however, been built of the kind here represented, some of them being considerably smaller, for the Lofoten fisheries, but very

much on the same lines, and they have given great satisfaction for seaworthiness, handiness, and good sailing qualities. About 1906 an evolution towards steam took place, and now, as elsewhere, steam and motor power for ' bank ' or open-sea fishing are being extensively used.

The drawing of the Bankfiskerskoïte shows a metal (cast-iron) keel. In fishing-boats this is quite a modern innovation which has not generally been adopted. In pilot-boats it is more common. In a boat of the size represented the cast-iron keel will

OFF BREVIK

weigh about $2\frac{1}{4}$ tons, or about one-third of the total ballast. The displacement will be about 17·5 tons. But in these days of keen competition, and of long-distance deep-sea fishing, Norwegian fishermen begin to find they can afford to neglect speed as little as Scotch or English fishermen.

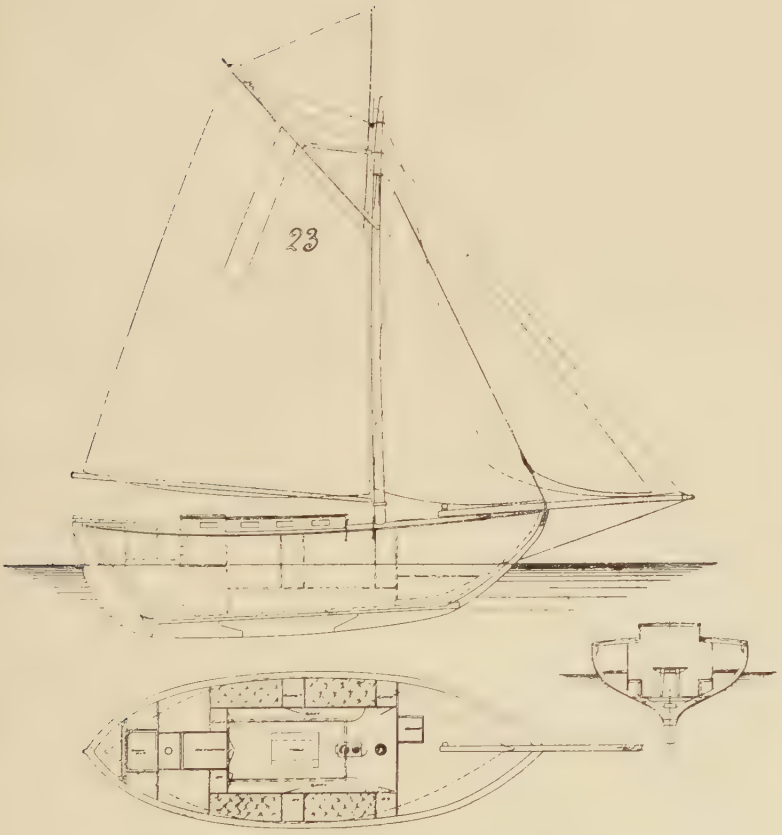
The Seilsjegte [1] is a style of boat used by the fishermen on the south part of the coast. They are open boats with a washboard, and range from 18 to

[1] Termed *snaekke*; probably the Norse *snekkja*, a ' small longship ' mentioned in the sagas.

25 feet in length, 20 feet being the ordinary size. They are clinker-built, like the Nordland boats, sail very well on all points, and are good sea-boats, although like all open boats they require careful handling. For the herring fisheries a somewhat larger boat of a similar type is used. They all carry a three-cornered topsail in addition to the usual fore and mainsails, but the topsail in these days tends to be neglected whenever the motor engine creeps in.

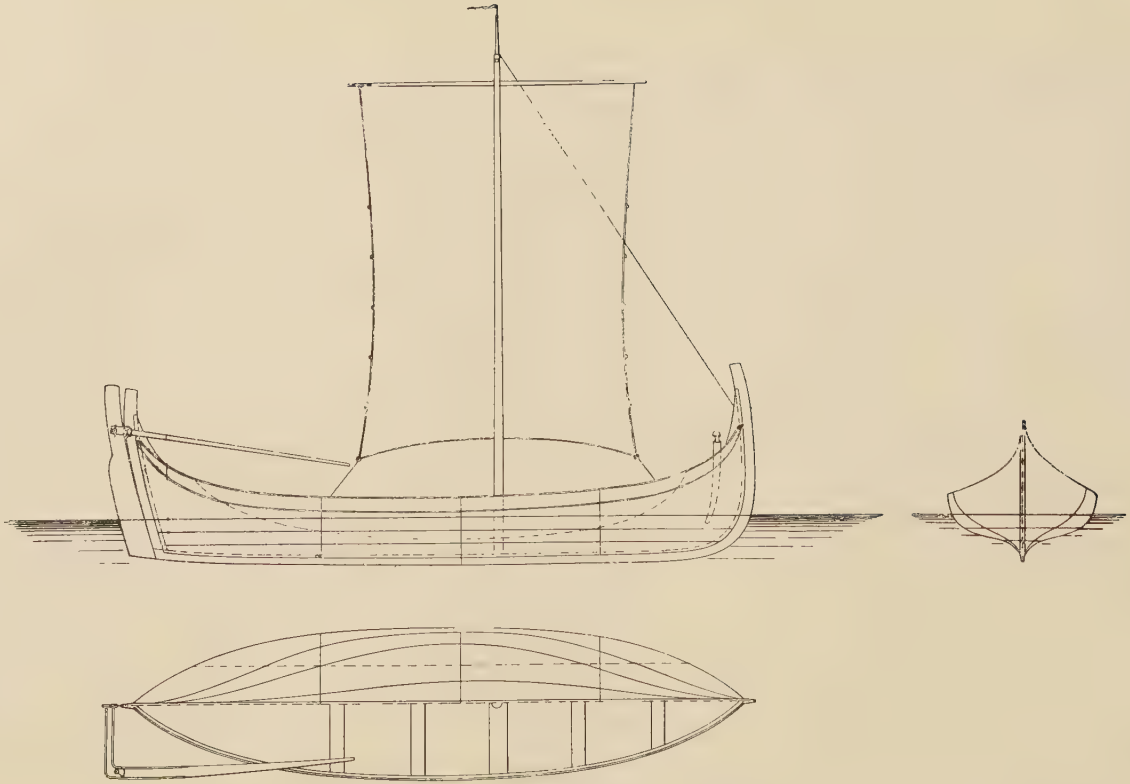
In the neighbourhood of Brevik and Larvik one may see lots of these boats out fishing on fine evenings, for every one living by the waterside, whatever his occupation, owns a boat. Occasionally other rigs are seen, like the one depicted.

In Christiania fjord the pleasure-boats are mostly of this type, though some charming modern decked yachts are now in fashion. Clinker-built with three to five wide planks, and wooden tree-nails, sharp raking stern, and high bow, is the usual type.

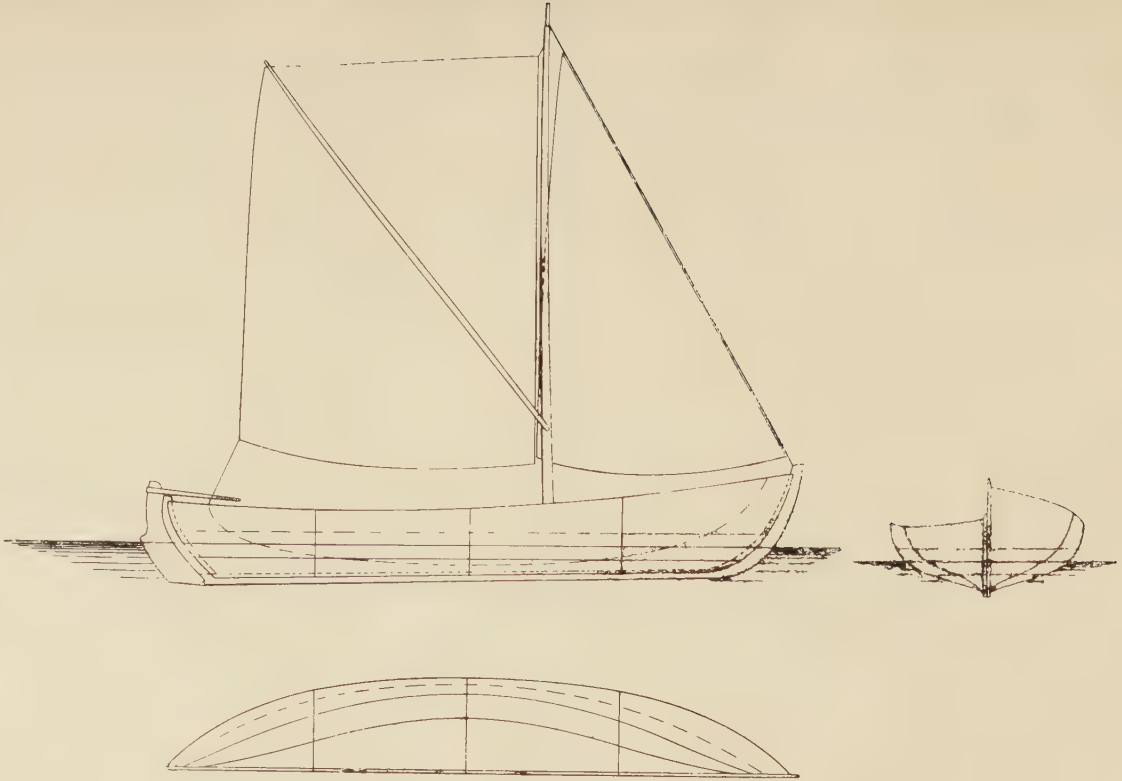


NORWEGIAN PILOT-BOAT—SAIL AND CABIN PLANS

To face p 64

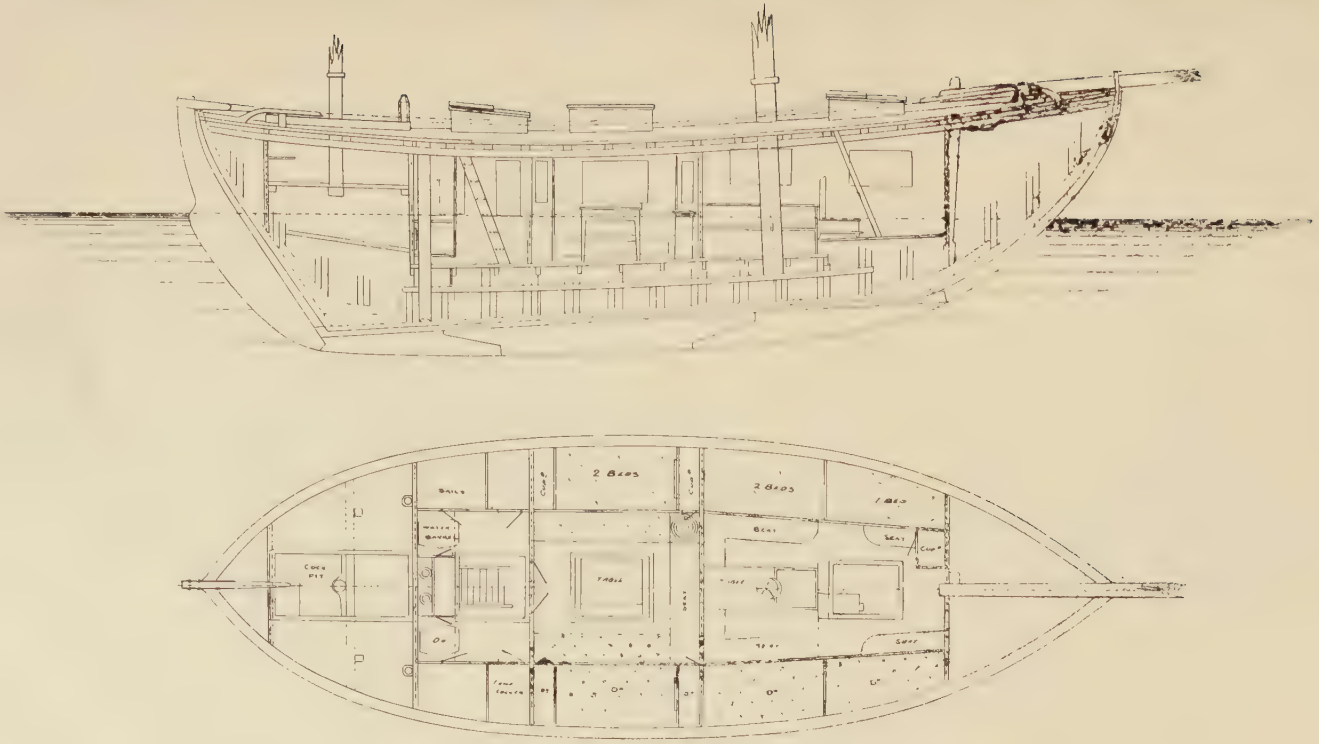


NORTHLAND BOAT—LINES AND SAIL PLAN

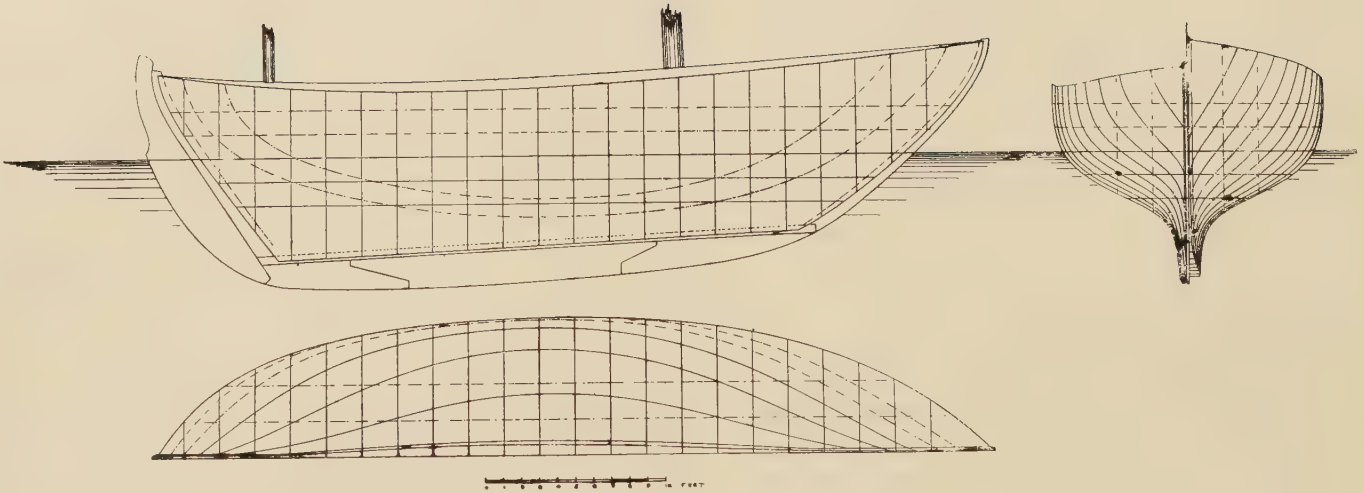


NORWEGIAN SKIFF—LINES AND SAIL PLAN

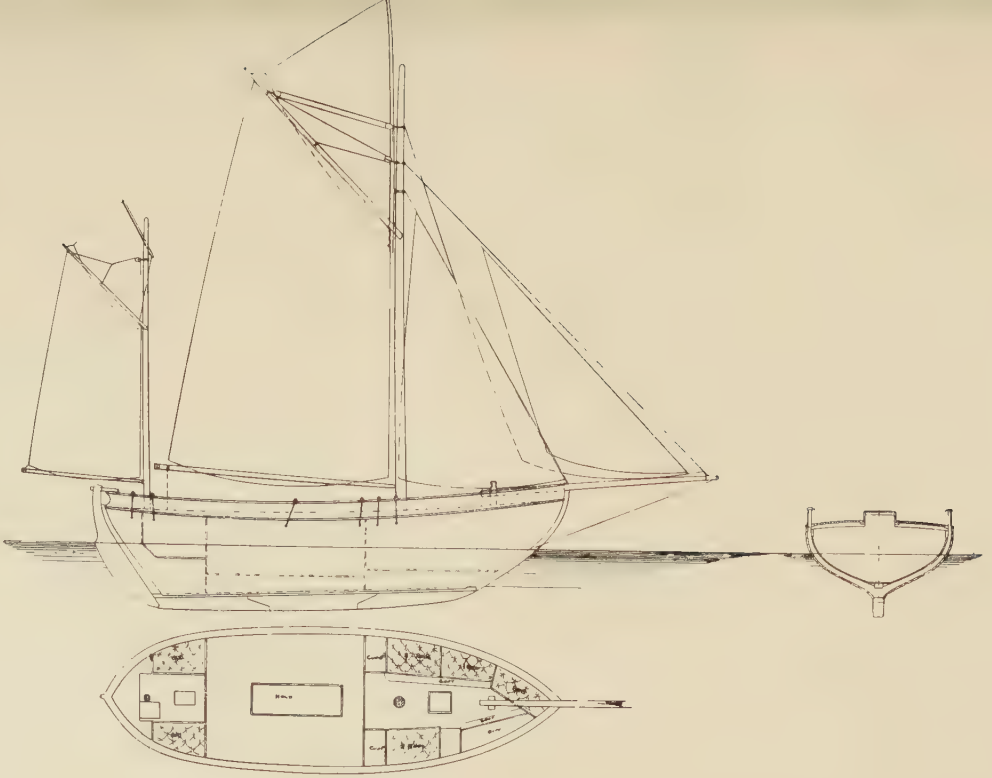
REDNINGSKOITE—SAIL PLAN



NORWEGIAN REDNINGSKØITE—CABIN PLANS



NORWEGIAN REDNINGSKOÏTE—LINES



NORWEGIAN BANK-FISHING VESSEL—SAIL AND CABIN PLANS

CHAPTER IV

HOLLAND

EUROPE owes to the Land of Dykes more than it generally cares to remember. Holland has been the schoolmistress of modern Europe. It first learned and taught the principles of modern government, and the true meaning of political and religious liberty; it has led the van in art, in agricultural science, in physical research, in modern finance. It has taught more conclusively than Phœnicia, Venice, Spain, or Portugal the true meaning of Sea Power, of over-sea colonisation. And of the nations of Europe the British have best learned from her what she had to teach. Her mantle has fallen upon our shoulders.

To no man is the greatness of our debt to the Dutch more forcibly brought home than to him who has widely used the sea, in whom something akin to reverence springs up as he roams, and finds everywhere about the globe the footprints of this steadfast sailor race. The very sea-terms in everyday use all across the seven seas, alike by Briton, Yankee, and every Northern race, were in the mouths of De Ruyter and Van Tromp.

Not long ago I mentioned some of these aspects of Dutch history to a Transvaal Boer. 'What!' he said, 'were we ever a maritime power? had we ever com-

mand of the seas?' I told him further how ultimately, after hard knocks, it had been lost to Holland and won by Britain. He whistled in a thoughtful way, and then nodded his head. 'I see,' he said, 'it was by sticking to it, same as here.'

To this day Holland remains the land of the sailing-boat *par excellence*. It is the Mecca of the modern yachtsman. From the Dutch English royalty and our old friend Samuel Pepys first learned about pleasure craft: from them came our earliest yacht models at the beginning of the nineteenth century. From them the Thames barge has its spritsail, leeboards, most useful of shallow-water contrivances, and no doubt its exquisite taste for bright paint.

Certainly no Western race is so amphibious as the Dutch, and no land animal except the duck takes so readily to navigation.

More than any types of boat, those of Holland have been influenced by the peculiar waters which they navigate; better than most they satisfy their peculiar requirements. Indeed, no nation but the Chinese has had occasion in modern times so little to alter its accepted types of craft. Three centuries ago, in lines and in rig, Dutch small craft were almost the same as they are to-day. Our own special types, as such, are almost entirely developments of the past century, tracing certain peculiarities from older, rougher, and in general smaller craft, which were their ancestors, but owing their growth as a distinctive class to the great increase in coast trade and sea fisheries, and the unparalleled activity in boat-building which has been the result. In fact, the consideration of any sea-going fishing-boat in the British Isles will show the very modern development of the majority

of present British types. The nineteenth century was an era of sea boat-building as much as it was an era of steam. The small, open, bluff-bowed, roughly rigged fishing fleets of the early part of the century, down in fact to the forties and the fifties, have given place to large-decked, clean-lined, sea-going fleets, rigged and equipped with scientific precision; more powerful, more speedy, and infinitely more numerous.

FLUSHING MUSSEL-BOAT

But in Holland the requirements of her internal trade to-day are almost identical with what they were three centuries ago. The country had reached almost its highest state of agricultural and commercial efficiency at the beginning of the seventeenth century. Hence while in England, in the comparative backward state of her development, the small sailing-vessel was in its infancy, Holland, great in the trade and the councils of the nations, had developed and

perfected her own types of craft, much as she had done her own methods of communication, of government, and of trade. And to these types, with the characteristic tenacity of the race, Holland has been true.

The old Dutch Zee schuyt of the seventeenth century is familiar to us from the etchings of Van der

OLD ZEE SCHUYT HAULING NETS
(AFTER VAN DER LAAN)

Laan, and the wonderful paintings of Van der Velde the younger, and of Bakhuizen and others of the great Dutch school of marine painting of the seventeenth century.

The pictures of these great artists, remarkable alike for their wonderful aerial perspectives, the wide light of their skies, the restraint of their colouring, and the boldness and accuracy of their drawing, show that while the present schuyt rig was in existence at

that time, the sprit and squaresail rigs were very common. The Zee schuyt of the day, probably the

OLD ZEE SCHUYT, SEVENTEENTH CENTURY
(AFTER VAN DER LAAN)

earliest form of herring drift-net fishing-craft, had two masts, main and mizen. The latter carried a

OLD SCHEVENINGEN BOAT, SEVENTEENTH CENTURY
(AFTER VAN RUISDAEL)

single squaresail, which was frequently kept set when riding at anchor or hauling nets. The mainmast was

usually a single pole, but sometimes carried a topmast. It was placed well back, even abaft the midship section, in the position rendered familiar by the old gun-ketches of the beginning of the nineteenth century. A lower course and square topsail were set upon it. In this rig we have the precursor of the schooner-rigged galliot on the one hand, and the three-masted square-rigged ship on the other.

It will be noted that the fore triangle with this rig was very large, and from some early etchings of the

EARLY LUGSAILS, SEVENTEENTH CENTURY
(AFTER BAKHUIZEN)

period it appears that it was filled very often by a short foremast with a single squaresail upon it, as an alternative to large forestay sail and occasional bowsprit and jib, which seem to have replaced it by degrees.

The Scheveningen boats of the time are shown by Van der Velde, rigged with the two square-rigged masts, but in this case very often the arrangement of the masts was that of main and fore masts, the mizen being apparently omitted.

Bakhuizen shows this square rig without a mizen,

and with yards braced round, and tacks so hauled down forward as to form practically a lugsail.

The vessels themselves had the round stern still familiar in Dutch craft. The poop was in those days higher than we are accustomed to see it. This high poop, retained to the present day in the sea-going junk of China, in the dhow and other Eastern craft,

REEFING SPRITSAIL (AFTER VAN DER VELDE)

although considered by Western sailors to be ugly and unshipshape, is in reality a very seamanlike and convenient provision in any sailing-vessel; and often when the writer had it not, he longed for it, and when he had it, he thanked Heaven and the boat-builder for a staunch dry poop whence the vessel could be worked with some degree of comfort and command when every other part of the ship was awash.

The leeboards of the seventeenth and eighteenth centuries were of the same shape as those still in use—the long, dagger-like board in the shallow boats, the triangle of the ordinary sea-going craft, and the almost circular shape of many river boats.

The clinker build and the wide, flaring bow and curved stem-piece were the same as at present, and the tall pole-mast, gay colouring, large, easy-running

DAM SCHUYT (AFTER VAN DER LAAN)

blocks, and long vanes have little altered. The sprit-sail and the gaff mainsail are the same.

No European type of craft, with the exception of the open Norse skiff, has such antiquity as this of the Dutch.

Ruskin in a well-known passage condones the inaccurate drawing and ignorance of seamanship displayed in the works of marine artists of his day by the statement that art which reduplicates art is necessarily inferior, and that a ship in full sail or a perfect

boat is an 'ignoble subject,' and can never become the subject of noble art because it is of man's making.

Yet the exquisite little studies of Van der Velde, with all their play of light and cloud, of wind and sea, cannot be surpassed in landscape painting. They depend for their effect on the accuracy of delineation

OLD DUTCH KETCH (FROM AN OLD PRINT)

of the outline of the wave-cap, the curve of the sail and spar, the strain of the rope, the heel of hull, or the direction of swing of an anchored ship.

These things tell truly the force and direction of the wind in the picture; they give the atmospheric effect which is sought to be expressed; they are subject to unalterable laws, and if the artist is oblivious

of them he may as well forget the laws of light or the law of gravitation. If the human frame must be studied and drawn with reference to anatomical facts, if drapery must hang truly, so much the more must the sail hang furled according to law, or draw and belly truly in the wind as Nature alone permits it. The sail cannot swell in untrue curves or fly against the wind, the sea-caps cannot run counter to it, any more than a building can stand without foundation

OLD SCHUYT (AFTER VAN DER LAAN)

or water run up-hill. Many a sail one has seen in pictures wrongly bent which would blow away or send a vessel stern first, many a hull wrongly drawn which would infallibly swamp, or could not have come out of any boat-builder's shop. This cannot be art, whatever imaginable colouring it is shrouded in. Van der Velde, using his vessels as accessories to interpret his thought and to illustrate the restfulness of calm, or the war and motion of high winds in the wide

tide estuaries of Holland, has never been surpassed in his expression of atmosphere, sun, and wind, and this by following the very laws which sea painters in the nineteenth century so long thought they could dispense with.

In nothing did the Dutch Marine School more greatly show their artistic sense than in their appreciation of the fact that the sailing-boat itself is an object for the highest art, in so far as it is used as an expression of the spirit of the picture, or as a means of interpretation of Nature.

The fishing-boat in harbour, except in so far as it displays the impress of its calling and the scars of the sea upon it, is no very striking thing, perhaps. But the moment it is at sea, breasting the rollers, heaving its rounded sides through the wave-crests, or throwing off the attacks of the threatening breakers, bowing beneath the persuading pressure of its sail-spread, springing up and stopping to fist off the green seas, and plunging again into the long water-valleys, then it becomes a new spirit, a thing of life, of purpose, and of strength.

This is no longer the dead thing which was built by man. It has been kissed by heaven ; it is transformed into a morsel of great Nature. Its sails follow no curve ever made by man, its ropes tauten to a force coming at no man's bidding. It is caught and tossed, and swayed and slapped, by the playful buffets of a stupendous power of which yet it seems a part, the secrets of which it knows and bends to its own purpose.

It is this transformation into life, this tuning to Nature's keys, which laid hold of the imagination of the best of the Dutch masters, and made them see

that if a ship is in itself wonderful and beautiful, it is in its highest form when in the hands of wind and waves, and that then it is indeed removed from the realm of mere things. And in this, its highest manifestation, it was their ambition to paint it.

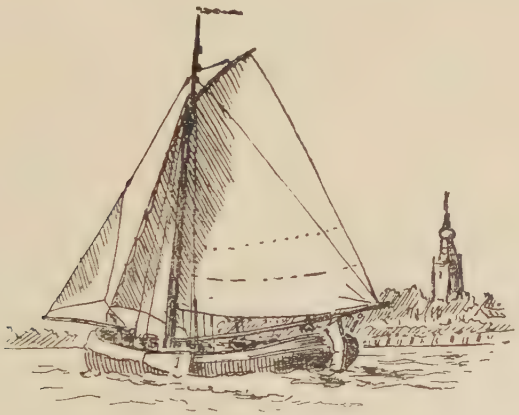
Ruskin's comment upon the Dutch Marine School of the seventeenth century, although robed in the delightful language which is so peculiarly his, seems curiously inadequate. He shows an utter lack, sur-

DUTCH PROTOTYPE OF THE BARGE

prising in such a mind, of that appreciation of fen and lowland country scenery which has given modern art much of its landscape inspiration. He perceives not the wide skies dear to the heart of the fenman; he is impatient with the short waves which those who navigate in tidal estuaries must put up with. He forgets that the sailing-craft of that day was high-pooped and was beflagged beyond modern wont, and he misses their historic accuracy. Surely Van der

Velde, of all masters, had that ' high instinct of momentary perception ' which the great critic declares to be necessary to the drawing of a sailing-boat ?

Nor will criticism of the shallow impurity of the seas depicted by the Dutch painters avail if Turner's seas are to be accepted. For Turner followed the Dutch School as much in painting the sharp, short seas of shallow tidal coasts as in his studies of craft,



SCHUYT (OR MERCHANTMAN)

in which, as in ' The Shipwreck,' the influence of the Dutch School is most marked.

Ruskin lived only to see his own sixth or ' modern ' period of marine painting ; he did not know that later, or seventh period, as we may call it, which must always be famous to all lovers of wild, true nature in the works of Wyllie, Dixon, Somerscales, Napier Hemy, or of Blacke and his compatriot Andersen.[1]

To this school belongs the honour of having rescued

[1] To these should be added with respect and gratitude Spurling, Briscoe, Chas. Pears, Donald Maxwell, and many others in whose work truth is apparent.

art from an untrue conception of the sea, and having demonstrated the presence of law and order upon the water as upon the land. By the aid of modern shipping they have interpreted the sea's moods, its toils, its fickleness, its glory and its strength ; by truth and by study they have set forth as the old Dutch masters of the seventeenth century essayed to do, and so well did, through the medium of the Dutch craft of that day.

Homage to Turner is yet possible to the man who seeks for truth to Nature's laws in all painting of the sea ; for wild as was his imagination, truth lay in his wind, and his craft were always possible, even if canvased at times in a way to strike terror to the average coastwise skipper. He was curiously unequal in his delineation of vessels, his square-rigged ships showing a general accuracy of drawing and understanding of sea matters which often seem quite absent in his fore-and-afters. But these faults are more apparent in his engravings than in his paintings, where they are redeemed by the magnitude of his conceptions. The back wave off his Calais Pier, the down-river light in his Blythe sand, so true to those wide eastern estuaries of Britain, are interpretations which must be appreciated by all sailors. His general influence in the direction of accuracy has been too much ignored by his admirers, and but for the modern sea-school of Wyllie we should still be immersed in untruth and clumsiness in all our seascapes, notwithstanding the assistance of photography towards accuracy in the delineation of certain phases of sea life.

The distinctiveness of Dutch craft is not less marked than that of the Chinese. Even to the artist, often so blind to nautical facts, many of the Dutch

characteristics are frequently apparent. The great, commanding-looking rudder, the round, merry-looking bow, the comfortable tumble-house of the topsides, the tall, splendidly proportioned pole-mast and the long vane at its summit, the short gaff and long boom, the bright colouring and spotless polish—all these are as much a part of Dutch scenery to the majority of minds as are lock-gates or windmills. The whole has an aspect of old-world incompetence and picturesqueness which is utterly fascinating.

BOATS AT HAARLEM (FROM A SKETCH BY E. W. COOKE)

Yet, in fact, in that slow-looking ship, the Dutchman possesses a combined floating home and cargo carrier which is second to none in handiness, smartness, comfort, and speed in the waters she navigates.

Among the more familiar types are the Eel schuyts or tjalks, and the Scheveningen pinken. The former have been beautifully delineated by E. W. Cooke, and their appearance is well known to Thames estuary yachting men. They are perhaps the most representative of Dutch sea-going craft. They carry the

usual short-gaffed mainsail, setting an infinitesimal jib-headed topsail above it. The main boom plumbs the stern-post, thus being securely out of the way for passing through locks and pushing through crowded inland waterways. Other types familiar to British yachtsmen are the Boeier; the Hoogaars, with its great tumble-home of the topsides and flat bottom and its long lean run; the little round Tjotter; and the great trading Haak, often nowadays built of steel.

TJALKS ON THE MAAS

Everything on board a Dutchman is calculated with reference to the necessities of inland navigation. The bowsprit is a running one, and the huge stay foresail is ample head-sail for ordinary work where quick turning is required. The stout rubbing strakes, which to the unaccustomed eye give such an appearance of clumsiness, enable a schuyt to jostle her way into the most crowded quarters with delightful impunity. The short gaff itself, a thing of wonderful and intriguing

curves, is a concession to riparian owners; this bringing of the centre of effort of the sail-area low down prevents excessive heeling and saves many a farm window and many a pensive cow from unceremonious annihilation. Partly with the same object, and partly to counterbalance the want of depth of hull, the Dutchman has adopted the great beam, which

TURF BOAT

is perhaps to the ordinary mortal his most marked characteristic. The rounded stern with stern-post and rudder outside is, except in some smaller boats such as small coast pinken, almost invariable; and anyone who has been through many lock-gates in a craft with a long counter will appreciate the value of this style of build. The Dutchman is enamoured, and rightly so, of the full round curve, and has rarely

descended to that ugly though admittedly useful method of ending a boat, the transom-stern. With exquisite taste he so uses his white paint about the great varnished rudder-head, and his green round the little stern-ports, that the stern of his ship is generally a thing of beauty indeed. But this form of round stern, with the heavy quarters and the bluff bow, although adding to the carrying capacity of the vessel, greatly increases her appearance of beam, and makes her look more clumsy than she really is. As in the case of the Chinese junk, however bluff or unwieldy the upper works appear, the under water lines are generally very 'sweet,' and Neptune, to his credit be it said, has ever a soft heart for a full sweet curve.

The 'swim,' a most primitive form of bow, such as with little difference may be met with in the rivers of Bengal or of Central Europe, as well as in many Chinese sampans, in which naval architecture has not progressed with particular rapidity (having remained practically stationary for some thousand years), may still be seen in the Botters at Haarlem and many places in the canals, as well as in the eel boats, of which a fleet is often to be met off Flushing. In a vessel of light draught this shape of bow is far less injurious to speed than might be imagined, although in a short head-sea it is inclined to 'slam,' and light displacement Dutch yachts of this build which are given a good sailspread are particularly fast in narrow waters.

The solidity and strength of Dutch construction is positively refreshing in these days of light scantlings, and the fashion of polishing the oak of the hull adds greatly to the impression of power in these vessels.

The Scheveningen boats are clinker-built and have the characteristics of Dutch craft almost to the extent of caricature. But going to sea or landing in the surf on that cruel coast call for a bit of good construction. It is noticeable that many of these boats carry a small mizen which is the peculiar sail of sea-keeping craft,

'PINK' OPEN BOAT, SCHEVENINGEN

and this sail, as might be expected, is never seen inland.

Experts in sails will note that the Dutch mainsail is nearly always laced to the mast, and that mast hoops are seldom used. The sail is always set a long way from the mast, thus avoiding the wind eddies which come off the large diameter spars which are in use. Standing rigging is always the least possible, the Dutchmen believing in the play of the mast to make speed.

The old-fashioned 'galliot' was similar in construction and was generally rigged as what we now mostly designate a 'ketch,'[1] but carried in addition to the modern fore-and-aft sails the older square topsail, t'gallantsail, and course on the foremast, as very many Baltic ketches do to this day.

The rig appears to have developed in two directions: by the gradual enlargement of the mizen, and the bringing of the mizen-mast further forward, until the

'PINK' OR 'DUM,' SCHEVENINGEN

sail assumed the proportions of mainsail, from which comes the modern topsail schooner so familiar among the small traders of our coasts; and in the other direction by the gradual abolition of the square yards, leaving only the fore-and-aft sails of the modern ketch, or dandy, with the possible retention of a lower yard only for a lower squaresail, the superior advantage of which over a fore-and-aft sail for fair winds is admitted by every sailor.

[1] The Old French *quaiche*; the Spanish *queche*.

The gradual development in both directions may yet be seen in all stages upon the Dutch, German, and Danish coasts,[1] while the results are more distinctly apparent along our own shoreline.

The topsail schooner has assumed with us something of the nature of a national rig for our small

DUTCH GALLIOT (AFTER E. W. COOKE, R.A.)

coasters, now becoming more rare, while the ketch has become equally distinctive as the rig of the British trawler [2] and of the billy-boy, a type of flat-bottomed, leeboard-carrying coast trader, formerly much in use in the Eastern estuaries, and generally hailing from the old port of Goole.

The very commonest of the square-topsail schooner

[1] Chapter I. [2] Chapter V.

is apt to blind one to its merits, but it is in fact the best combination of the square rig with the fore-and-

EAST COAST LEEBOARD DANDY OR BILLY-BOY

GLOUCESTER SCHOONER—WINTER RIG

aft which exists for small vessels, and it presents all the advantages of each. The lower sails being of the

fore-and-aft type, a deck-watch of two hands will suffice in ordinary weather to put about a vessel of 200 or 300 tons, and make and shorten sail; the square topsail and topgallant sail on the foremast are not too large to be also easily handled by one or two men, and are big enough, especially with the big fine-weather course, to add many knots to every

TOPSAIL SCHOONER

watch with the wind anywhere abaft the beam. The advantage of a squaresail placed high up on the foremast in running before anything approaching a gale of wind with a heavy sea is well known to most sailors. These topsail schooners had a great vogue in the years before the war, and did fast passages of which their skippers and crews were duly proud.

It seems peculiar that in America, where the best

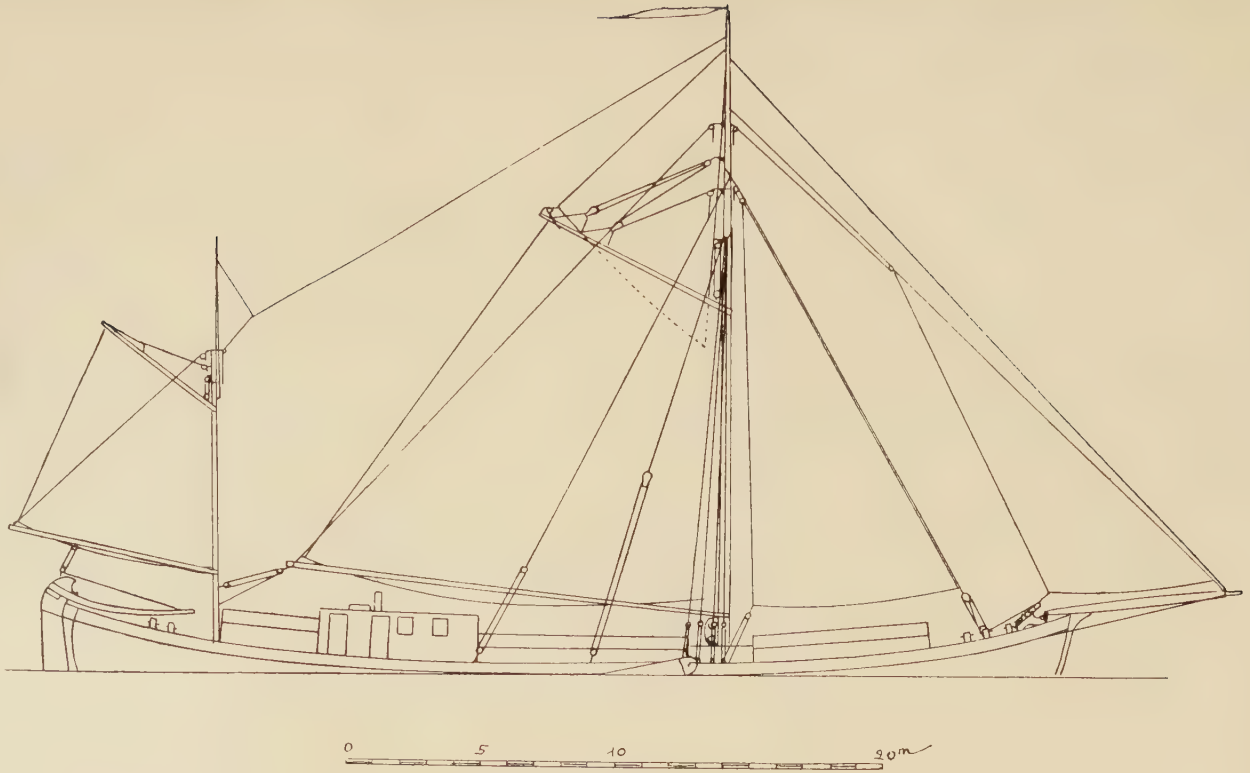
development of the fore-and-aft schooner rig is to be seen, the square topsail never seems to have been in much favour. While on this side of the Atlantic the three-masted schooner and the barquantine were increasing in popularity, and the square-rigged foremast was made a great feature, in America the number of masts increased until five (and even seven) masts were reached, and never a square sail was seen aloft, until the war, when barquantines began to come into

YANKEE FOUR-MASTER [1]

favour, as related later on, owing to the obvious unsuitable character of the pure fore-and-after for long voyages, especially in the Trades.

Yet it cannot be said that the Americans do not know what is best in schooner-building and rigging; the high-flaring bow, the sail-carrying power of the

[1] This schooner, the *Peter Pyne*, was 3000 tons, was 147 ft. to mast-heads, and had 70 ft. hoist of lower sails. She had frequently sailed 15¾ knots on her voyage to the Cape. She had auxiliary power which gave her 8 knots in smooth sea. She carried beside 4 officers, 2 engineers, 2 greasers, and only 6 hands for'ard.



SAIL PLAN OF THE HAAK

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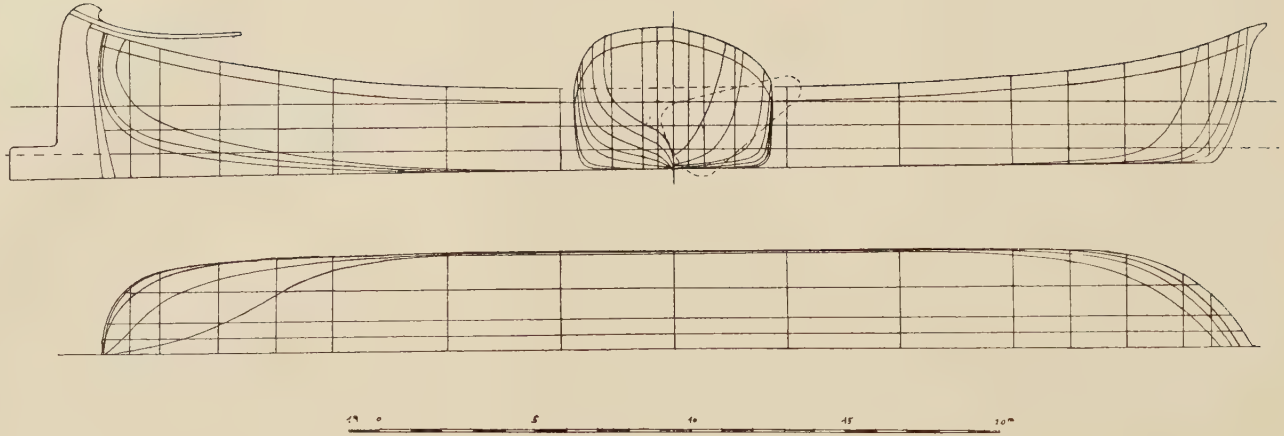

THE HAAK, 1900

L.O.A., 38m. 15; beam, 6m. 40; draught (light), 0m. 76; deadweight, 313 tons, loaded 2m. 32

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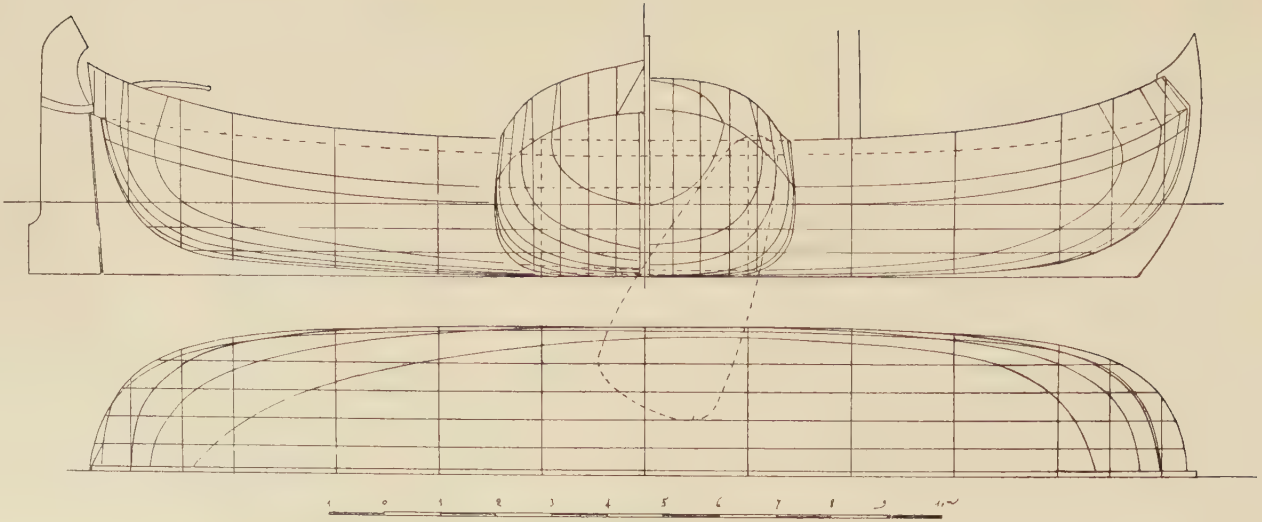

THE TJALK

L.A.O., 19m. 80; beam, 5m. 35; draught, 1m. 30; deadweight, about 153 tons

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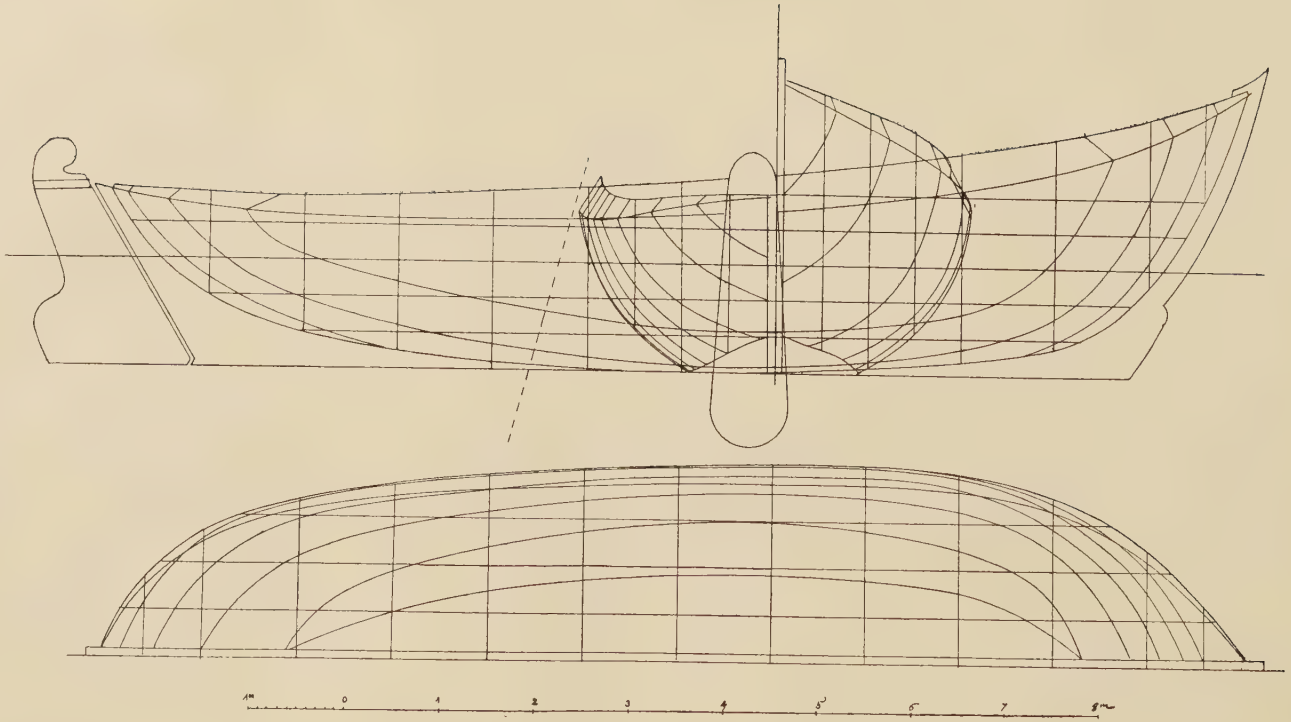
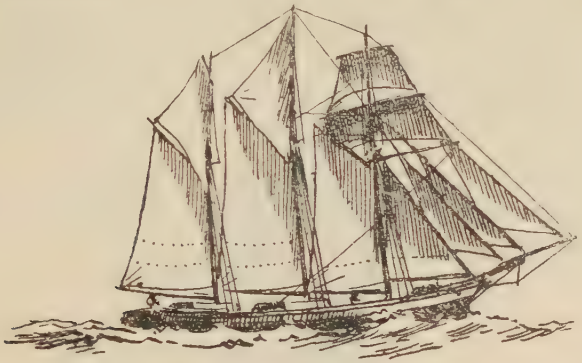


THE BOTTER

L.O.A., 12m. 55; beam, 4m. 15; draught, 1m. 15

By kind permission of 'The Yachting Monthly'

wide quarters, the tall lowermasts, long main-boom, and short gaff, which are so distinctively American,



THREE-MASTED SCHOONER

also combine to make schooners the like of which we do not know. Yet it is probably the old story, that each is suited to its own waters; the very length of

HALIFAX SCHOONER—WINTER RIG

the lowermasts and weight of boom in the American boats may be strong arguments against further weight from square yards being stationed permanently aloft,

while the more moderate-sized spars used round our stormy coasts may render such top-hamper harmless, and even, as already hinted, of positive advantage four times out of five in a strong blow and with fair winds.

My old friend, Skipper Lewarne of Helford, tells of a passage he made in the *Lucy* in a nor'-east gale from Runcorn to St Ives Head in 34 hours under close-reefed main, inner jib, and square fore topsail. It was the topsail which made the passage, the other sails just trimming her.

BARQUANTINE

The Russians have followed the Yankees to some degree in adopting the fore-and-aft rig for vessels carrying three masts, and many vessels of this type may be seen in the Baltic, as a rule neither remarkable for smartness or sailing qualities in the hands of the crews who man them. In fact, unkind critics of Slav seamanship were wont to say their crews could not tack ship with any other kind of rig.

The advantage of the fore-and-aft rig combined with squaresails on the foremast was apparent in

the increasing number of three-masted schooners and barquantines which became common before the war in our coasting-trade, and which, like the brigantine, are a development on larger craft of the topsail-schooner sail plan. A number of three-masted schooners to-day are old two-masters with main-boom

BRIGANTINE

cut down, and a mizen added for convenience of handling.

In this connection no sea fact is more remarkable than the total disappearance of the brig-rig for small coasting-craft, unless it be the sudden extinction of the brigantine in British waters since the war. Turner,

Cooke, and all coast artists of the earlier part of the nineteenth century bear witness to the universal adoption of the brig-rig along the coast, especially in the coal trade ; and in all early views of the Thames these vessels, with the big single topsail and topgallant sails and their enormous fore topmast staysail, form a conspicuous feature. They have departed before

OLD COLLIER BRIG (AFTER E. W. COOKE, R.A.)

the superior handiness of the fore-and-aft sail for weatherly work, and the necessity for reducing crews in order to compete with steam.

In the other direction, that of the ketch, the Dutch appear, as already remarked, to have set the fashion for this very handy rig in the Baltic and North Sea. It is seen in the Zee schuyts of the seventeenth cen-

tury, and in our own and other navies for bomb vessels, in those days with squaresails on both masts; and though it went out of fashion during the first half of the nineteenth century, the fore-and-aft ketch or dandy-rig of to-day may be said to be the rig *par excellence* of the North Sea. Not only the Danish coasters, but those of our own isles, use it extensively;

SWIM HEAD EEL CATCHER

practically the whole of the trawling fleets of the North Sea, of whatever nationality, have adopted it, so that it remains in the steam trawlers and drifters in whom the mizen is the most used sail when at sea for riding purposes and even when under way. It is curious to note in this connection that our east coast fishing-craft, hailing south of the Humber, which only fifty years ago favoured the lugsail, almost without ex-

ception altered to the ketch, or 'smack-rig,' as it is now often called. Even Whitby has followed the fashion, and Grimsby also. Yarmouth and Lowestoft were, when Houldsworth wrote, well known for their fine lug-rigged boats; yet subsequently they and

AT HAARLEM

Ramsgate to the south, as well as many channel ports on both sides, adopted the smack rig for trawling. What was the reason? First, the fore-and-aft rig was found more convenient than the lug for heaving to, as the trawler has to do for hours at a time, the main

tack being easily triced up and staysail laid aback. Then the one mast of the old 'smack' went out in favour of the two, with the short main-boom and easily handled mizen. Every one who has sailed a ketch knows her handiness for a small crew. And for this rig we may largely thank the Dutch. As befits our stormy seas, however, we have reduced the tall mizen of the Dutch or Baltic ketch to a moderate pole-mast, which is not so handsome-looking, but is more to the purpose in our seas. It is noticeable also that the short boom of the Dutch and Baltic mizen has been considerably lengthened in British seas to give that width of foot which is dear to the British sail-maker.

VLAARDINGEN

CHAPTER V

SCOTLAND [1]

'*Fife*' *or* '*Fifie*' *Model*

On the east coast of Scotland, from the English borders to Whitehills in Banffshire, and along the coasts of Caithness and the Orkney Islands (and during the 'eighties' and 'nineties,' the Shetlands also), the boats used in the herring fishing have always been of the 'Fifie' build, with very little rake on either stem or stern.

Eighty years ago these boats only measured some 30 to 35 feet of keel; they were clinker-built, and of light draught of water. About the middle of the century fore cabins began to be introduced, and the length of keel gradually increased, till by the end of the 'sixties' 40 feet was the usual length for a new boat.

The herring fishing had hitherto been confined to the inshore waters; but fishermen now began to push farther seawards in search of the herring shoals; full decks began to come into use, a large open hatchway being provided to facilitate the working of the nets.

Decked boats were first built by the Royal National

[1] For much of the most interesting information in this chapter I am indebted to Mr Robert Duthie of the Scottish Fishery Board.

SCOTCH ZULU

To face p. 96

Lifeboat Institution in order to prove to the fishermen the greater comfort and safety to be derived from full decks. From 1867 onwards the fashion steadily grew as the advantages became more and more apparent.

As fishermen have continued pushing farther and farther to sea, both at the herring and the cod and

OPEN FIFIE, 1865 (FROM A MODEL)

ling fishings, the tendency has been to increase the size of boat. The carvel build, first used in the Firth of Forth, has almost entirely superseded the clinker or clench build in the case of first-class boats.

The model has also been greatly altered. Instead of the old round, tub-shaped craft of half a century ago, those now being built are finely modelled vessels of 60 to 70 feet, with yacht-like lines, longer keels,

deeper bilge and greater draught of water, especially aft.[1]

The usual rig of the east coast fishing-boat is the lugsail, with jib and mizen, different sizes of the latter being used according to the state of the weather. A big jib and mizen, both of which require 'booms,'[2] are used in fine weather. When it blows hard, these long 'booms' are both taken in; but a small mizen, with shorter boom, is always used when going close-hauled, even when under low sail. Owing to the great length of these boats, there would always be a risk of their missing stays if no mizen were used, as the sail would then be all upon the fore part of the boat. Even in very rough weather, therefore, a small jib-headed mizen is used to keep the boat up to the wind, and facilitate the process of staying.

[1] The cost of one of these boats, including steam hauling gear, sails and other outfit, used to be from £500 to £600, but by 1906 was not less than £700, owing to increased cost of material and other causes.

One recently built at Fraserburgh was 66 feet keel and 70 feet over 'stems'; 21 feet beam outside gunwale, and 20 feet inside plank; 7 feet deep inside, and 40 tons register. The carpenter's account was £430; iron work, £52; sails and outfit, £150, and steam hauling gear, £105;—total, £737; and the following outfit of sails, etc., was provided:—Foremast, 64 feet long by 1 foot 8 inches at the deck; mizen-mast, 55 feet by 1 foot 2 inches at the deck; jib-boom, 54 feet by 1 foot 1½ inches; foresail, 310 yards; jib, 150 yards; big mizen, 210 yards; winter mizen, 150 yards; jib-headed mizen, 90 yards, and storm mizen, 40 yards. The boat has also two canvas 'drogues' or floating anchors; one, the old tow net-shaped canvas cone, and the other, topsail-shaped, such as is carried aboard the smacks that go to the Faroe and Iceland cod-fishing. These drogues are also termed 'fly anchors' by the fishermen. They are often used to check the way of the boat when running into a crowded harbour. For this purpose it is placed on the quarter, with a short rope fast to it, ready for heaving over before the entrance is approached.

The large modern Scotch boats all carry steam-winch or capstan for hauling nets and hoisting sail—a device first developed by the Cornish boats—as well as in most cases a 13 to 15 foot dinghy, and to-day the Kelvin or other motor is becoming a regular part of their equipment.

[2] In Scotland 'boom' is used for any out-rigged spar, whether bowsprit or jigger-boom, fore or aft.

In 'staying' small lug-sailed boats the yard is usually 'dipped'; but with all the larger boats the sail is lowered to the deck, unhooked from the 'traveller,' hooked upon the 'Burton' stay, and swung aft and then forward on the other side of the mast. The process is a dangerous one in rough weather. Some crews occasionally carry a 'working' sail at the great line fishing in winter and spring, and they are thus able to have a sail ready on each side

FIFIE, REEFED, WITH SMALL MIZEN

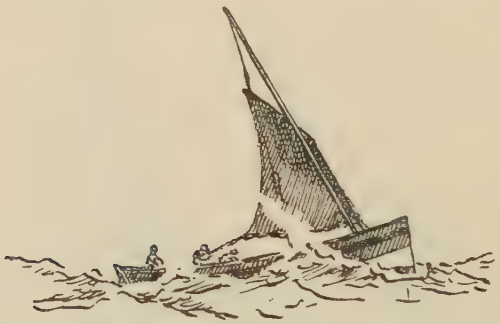
of the mast, lowering one and setting the other every tack, the working sail being generally smaller than the other, often the sail of an old boat. When 'beating in' lines with a lug-sailed boat, the tack is usually at the foot of the mast, and the 'Burton' stay set up on the side opposite the halyards, to strengthen the mast.

The Scotch lugsails are generally made with reef cringles all the way up the luff and leech of the sail

at intervals. I have counted thirteen such cringles on a fore-lug. All are meant for use when required. Scotch fishermen never take their mizens forward as the Cornishmen do, unless the foresail has given way. The bunch of canvas, after reefing, is heavy and awkward to handle.

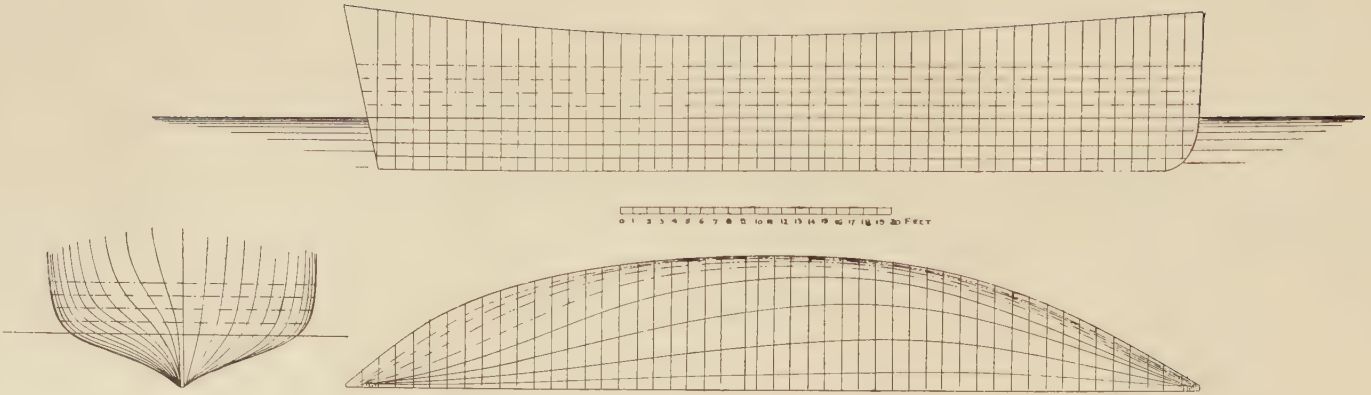
The large mizen is always of lighter canvas than the foresail, as it is only for use in moderate weather.

Moray Firth fishermen often keep a complete 'winter rig' for their big boats. The winter spars are shorter, and the sails smaller than in summer.



FIFIE, WITH RAKED MAST

The lug rig is more than holding its own among the Scotch of the east coast. For this there are probably several reasons. First, the smack-rigged boats that have been discarded were getting too small, and their owners going in for larger boats preferred the rig they were accustomed to. Secondly, many of the smack-rigged boats were rather flat below the counter, and thus struck hard in a seaway. The counter is not a favourite among fishermen, and apparently they are easily put off it back to the old build, and with that to the old rig. The Moray Firth sailmakers



SCOTCH FIFIE—LINES

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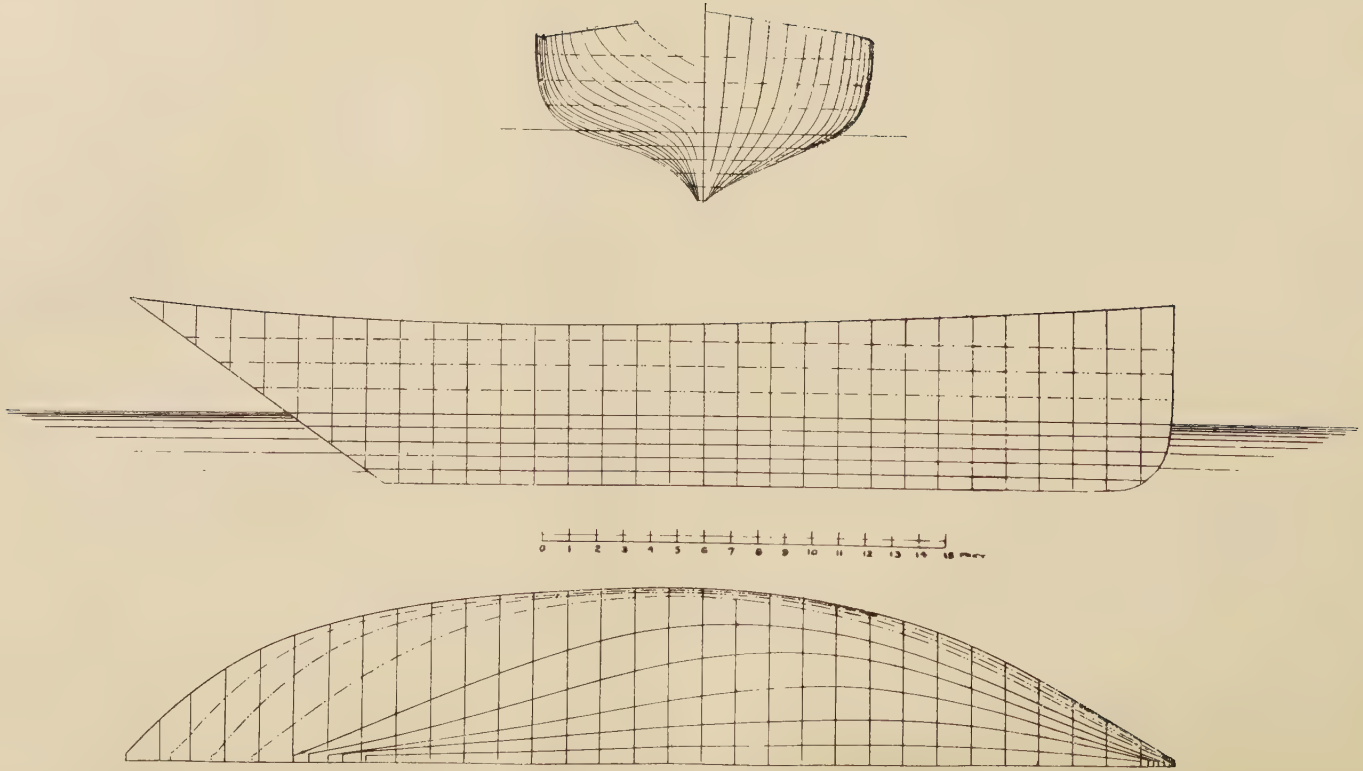


SCOTCH 'ZULU'—LINES

have not had a tithe of the experience of making smack sails that they have of lugs. The result is, that they have attained to a high state of perfection in making lugsails (and in fact in their own way turn out sails as good as anything made by yacht sail-makers); but they have not made the same progress with fore-and-aft sails, and really do not turn out

SMACK-RIGGED FIFIE, DUNDEE

the same class of work when they get an order for the latter.

Then the simplicity and lack of gear about the lug rig, and the handiness with which everything can be unshipped, makes it *par excellence* the sail of the drift-net fisherman. Finally, the modern shape of high-peaked lug, into which the old -fashioned square-headed sails have developed, is unequalled for set and speed-giving power.

'*Smack*'-*rigged*[1] *Herring-boats*

Among the villages lying between Fraserburgh and Macduff, the smack rig came a good deal into favour during the seventies and eighties, but of recent years, curiously enough, the tendency has been to drop this rig in favour of the lugsail.

The fishermen belonging to these villages for the greater part of the nineteenth century regularly fished cod and ling in the Minch from Cape Wrath southwards to Barra Head and Mull; they also followed the herring fishing at Stornoway and other stations in the Hebrides; and during the last quarter of the century they regularly prosecuted both the long line and herring fishings among the Orkney and Shetland Islands. In the narrow lochs and sounds of these waters the smack rig was found very convenient and easy to work. It was a handy rig for 'beating in' lines, and free from the risk to life incident to 'staying' a lugsailed boat. Fishermen also found it much more economical. A smack's sails will, it is said, last longer than a lugger's; and owing to the support given by shrouds or standing rigging, there is much less risk of the mast carrying away. With lugsailed boats such accidents were quite common; and even apart from accidents, the cost of upkeep of masts and spars was heavy.

Upon a long course, however, and in light winds, the lug rig has been found to be undoubtedly the faster of the two. Owing to the great distances that the Scotch fishermen have lately been going, both

[1] *i.e.* cutter-rigged, or in some cases with a mizen. The term is used among fishermen for any fore-and-aft rigged vessel, whether strictly cutter, dandy, or ketch—wherever, in fact, the gaff and boom mainsail is used as opposed to the lug rig.

to the fishing-grounds off their own coasts and to distant stations such as Yarmouth, Kinsale, and Shetland, and the fact that auction sales have almost entirely superseded the old 'engagement' system, it has become imperative that fishermen should get as early to market as possible, as first arrivals usually command the best prices. They therefore look now

'FIFIE,' RUNNING FREE

upon speed as a necessity, and not merely an advantage or a matter for pride. It is not surprising that of recent years the motor has begun to be extensively installed, though it is still largely used as an auxiliary only. In ordinary weather the lugsail will drive their boats as fast as the motor can do, and at much less cost.

Second-hand smack-rigged boats are eagerly bought up by the Shetland fishermen, who have, for many years, kept in touch with the villages where these

'FIFIE,' ON A WIND

boats could be got. When none were for sale, their orders for new boats have generally been placed with boat-builders in that locality.

These Shetland fishermen have only used big boats in the herring fishery for about half a century. Being accustomed to smack-sails in the vessels used at the Faroe and Iceland cod fishing, and having experience of similar sails in trading vessels, they have taken much more readily to smacks than to luggers.

A good many of these old smack boats are also to be found along the west coast of Ross-shire, in Loch Broom, Gairloch, etc., where they suit the narrow waters, and can be worked either as fishing or trading vessels, by a much smaller crew than a lugsailed boat requires.

It may be noted that many of the young Highlanders, like the Shetlanders, sail in the merchant service in winter, and go as hired fishermen from the Moray Firth ports in summer. When two or three of them wish to settle down at home, they find it a good plan to bring home a boat, preferably a smack, with them from the east coast.

The 'Skaffie'

From Portsoy westwards along the Banff and Moray coasts, and round the eastern seaboard of Ross-shire, until within the last forty years, the 'Skaffie'[1] or 'Buckie Skaffie,' as it was often known, was universally used in the herring fishing. This boat differed materially from the 'Fifie' model. Both 'stems'[2] were very much raked, and the 'forestem'

[1] Houldsworth in his *Deep-Sea Fishing*, 1874, mentions these boats under the name 'Scaith.'

[2] It will be noticed that in Scotland, where double-ended, or double-bowed, or sharp-sterned boats, as sailors variously term them, are the rule, the term 'stem' is used to cover both stem and stern posts.

was generally much curved. The 'Skaffie' was usually broader, with a flatter bottom (though generally deeper keel), and with a consequent bluffness about the bows and quarters. Fishermen found this boat much readier to answer the helm in stays than the old 'Fifie' model, and this was a great advantage when 'beating in' lines, or beating into a narrow bay or channel. The old-fashioned 'Fifie' did not turn readily when under low sail. Beating into such

OLD 'SCAITH,' 1874

places as Wick Bay or Stornoway Loch, the 'Skaffie' showed a decided superiority. There was also more deck-room on the 'Skaffie' in proportion to the tonnage of the boat, and this was an advantage at the herring fishing, especially fifty years ago, when the boats were much smaller than they are now.

Advocates of the 'Fifie' model argued that shortness of keel had certain drawbacks as well as advantages, and that a 'Skaffie' when struck on the quarter by a heavy sea would be much more liable to 'broach

to' than a 'Fifie'; and that the former boat, from the construction of the bows, would also labour harder in heavy weather. It is said that it was no unusual thing for one or two timbers to be broken through slamming in a head-wind and heavy sea.

In this evenly matched contest of two very distinct types of craft, it may be inferred that neither

'SKAFFIE'

model possessed any material advantages over the other, otherwise the fittest would have survived and the other would have been discarded, whereas in fact a compromise has been the result, of which the modern 'Zulu' is the outcome.

The rig of the 'Skaffie' did not differ greatly from that of the 'Fifie.' The most noticeable point of

difference was a much greater proportionate breadth in the lower half of the foresail. Owing to the shortness of keel, especially at the forefoot, this was required to keep the boat to the wind.

Houldsworth,[1] however, figures a 'scaith' of his

'SKAFFIE'

day as carrying what was practically a 'main' lug, though slightly smaller than the big forelug, well in the middle of the boat, with a small mizen right aft

[1] 1874. The dimensions given are 41 feet over all, 13 feet beam, and 4 feet 9 inches depth of hold. The large 'Fifie' of that day was only 34 feet 6 inches over all to 13 feet beam.

sheeted to a short boom. This rig seems to have gone out of fashion, the forelug being increased in size, along the foot, and given greater peak, as in all the Scotch lugs of the present day, and the 'mainsail' carried further aft, and turned into a large mizen.

It is interesting to note that at that time the mizen even in the 'Fifie' was placed so far amidships as not to need an outrigged boom, and to be termed by Houldsworth a 'main' lug, and he goes so far as to point out the great advantages to be derived from the mizen as used by English fishermen.

A spar bowline seems to have been used in the 'scaith' to set taut the luff of the sail, called by the Scotch fishermen a 'wand' or 'set.'

The 'Zulu'

William Campbell of Lossiemouth was the first fisherman to attempt to combine the good points of the 'Fifie' and the 'Skaffie' models. In the year 1878 he got a boat built named the *Nonesuch*, with the fore stem and bows of a 'Fifie,' and the stern modelled on the lines of a 'Skaffie.' Fishermen at once dubbed the new model 'Zulu,' from our then redoubtable enemies in South Africa. This boat came rapidly into favour with the Moray Firth fishermen, and has entirely superseded the 'Skaffie.' A few of the latter are still to be seen in use at the smaller stations in the upper part of the Moray Firth, but none have been built for many years.

The 'Zulu' is also to a certain extent supplanting the 'Fifie,' as a few boats of this description are being introduced all along the east coast, even as far south as the Berwick district. The introduction of steering-wheels some thirty years ago instead of helms

or tillers has facilitated this innovation. Fishermen who had not been accustomed to it from their boyhood found great difficulty in ' shipping ' a ' Skaffie's ' rudder, which in the days when helms were used was always unshipped and taken on board the boat as soon as the nets were ' shot ' at night. The worse the weather, the more arduous the job when the

SEVENTY-FOOT ' ZULU '

rudder had to be ' shipped ' into position again after the nets were hauled in the morning. This difficulty has now been removed by the introduction of the wheel and fixed rudder.

The advantages claimed for the ' Zulu ' are, that it ' stays ' as well as a ' Skaffie,' and will lie as close to the wind and go as easily through a heavy head-sea as a boat of the ' Fifie ' build. The deep fore-foot

gives greater grip to windward, and prevents that falling off from a head-sea which is often so dangerous. The length of the boat above water, too, admits of a great spread of canvas in light winds, with consequent increase of speed.[1]

It is curious that in the modern 'Zulu' we find the straight fore-foot combined with the raking stern-post and sharp stern which are to be seen in some of the Brittany luggers in the Bay of Biscay, and which have long been used in the Cornish luggers. The raking of the stern-post has been much increased in some of the latter of late years, just as in modern yachts. It enables the under water lines of the body to be carried out more finely without resorting to a long counter, and consequently adds to the speed as well as to the turning-power of the boat.

In one respect all the Scotch boats, of whatever build, contrast remarkably with the Cornish, and that is in the relative draught of water at bow and stern. The Cornish boat draws considerably more water aft than forward, and has consequently greater lateral resistance aft, and the centre of lateral resistance being so far back, a proportionately larger mizen and less head-sail become necessary.

The Scotch boat, on the other hand, which has to some extent grown, at all events in the case of the 'Fifie' model of the east coast, out of a deep-bowed boat of coble type, has always retained a relatively deep and powerful fore-foot and bow, and a shallower stern. The result is that the Scotch boat has been more of a one-sail boat, and having the centre of lateral

[1] The largest 'Zulus' run to 61 feet keel and 83 feet over all. When driving hard, a whole fleet of these boats will be logging over 10 knots together.

resistance much further forward, the mizen has never played such an important part as in the Cornish lugger.

The Cornish boat when lying on the mud has the appearance of being tilted forward by reason of her deep keel; the Scotch luggers, on the other hand, lie in their tidal harbours on a fairly level keel, and strike the observer by reason of the concentration of power forward. To this and to the large size to which the big 'Fifies' and 'Zulus' now run, we are indebted for what is certainly the most remarkable single sail to be met with upon the seas outside the lateen, namely, the tall Scotch fore-lug. It is truly one of the finest sea sights of modern times to see this great brown pyramid come marching up out of the horizon, and go leaning by you at a ten-knot speed, the peak stabbing the sky as it lurches past some seventy feet above the water. The sense of strain and power is not so produced by any work of man at sea.

The unanimity with which Scotch fishermen as a whole have clung to the pointed stern is remarkable.

About the borders of Aberdeenshire and Banffshire a good many boats have been built with elliptical or counter sterns during the last fifty years or so. They were first built and owned at Pennan village, but they became fairly 'fashionable' at Rosehearty also a few years later, and there are still a few in the neighbourhood. Like the 'Skaffies' and 'Zulus,' these boats had more deck space in proportion than an ordinary 'Fifie,' and this was at first a far greater advantage than it is now, when all boats are so large. The tendency, however, has lately been to revert back to the 'Fifie' model, the disadvan-

tages of the counter being generally considered by fishermen to outweigh its advantages.

Small Line Boats

Distinctive local types of small line boats are not so clearly marked or territorially limited on the east coast of Scotland as are the larger herring-boats. For inshore fishing, a long-shaped, low-built, open yawl of from 15 to 25 feet of keel, with lugsail and, in the

LONG LINE BALDIE

case of the larger yawls, jib, and occasionally also mainsail or mizen, used to be generally employed. The size of the boat depended a good deal upon the nature of the harbour or creek to which it belonged. On open beaches, where the yawls had to be launched daily, and drawn up again after returning from sea, it was imperative that the boat should be as light as possible. As a result, the small line yawl used at open creeks such as Cairnbulg and Inverallochy (near

Fraserburgh) were low in the wood, of as light material as consistent with safety, and of very light draught of water. They could thus be easily floated off a flat beach, and they required no great quantity of ballast, which of course had to be put in and out daily. The timbers were 'stove-bent,' *i.e.* steamed and then bent into shape. Only the best of wood would stand this process, and much lighter material could be used than with hewn timbers. In other words, these boats were built largely with a view to being easily pulled, as the small lines were generally worked under oars.

After fishermen had realised the advantages of having decks on herring-boats, they were not slow to apply the same improvement to their smaller boats, and now practically every fishing-boat round the Aberdeenshire coast, of 15 feet keel and upwards, is wholly or partially decked. Hatches are not generally used in boats under about 28 feet keel; but even in these, waterways along the sides have been found most valuable in numerous cases where boats have been struck by sudden squalls which forced lee sides under water, or by heavy seas which but for the deck would otherwise have swamped them.

In such places as Fraserburgh and Peterhead, where there are safe harbours that can be taken at all states of the tide, the winter yawls are much larger, running up to 33 and 35 feet keel. These boats are built more after the model of a herring-boat ('Fifie' build); they are of strong material, full decked and hatched, and heavily ballasted. They have fore-cabins with sleeping and cooking accommodation for a full crew. They are rigged like the herring-boats, and the lines are worked under sail. Five men gener-

ally constitute the crew, both for small line and great line fishings.

These larger boats, from 25 feet keel and upwards, are generally known in Aberdeenshire and southwards as 'Baldies' (or in Fifeshire parlance as 'Bauldies'). The name is a contraction for 'Garibaldi,' and was originally used in full in Aberdeenshire. 'Skiff' is

NEWHAVEN BALDIE

more generally applied to this boat among the eastern villages of Banffshire.

From the Deveron westwards along the shores of Banff and Moray, and to a great extent also in the Firths of Forth and Tay, fishermen have generally preferred to work small lines in their large herring-boats, as they also work great lines. At Newhaven, however, the 'Baldie' seems to be sufficiently large

to answer most of the requirements for fishing in the Firth of Forth, and a good many boats of the same kind are also used among the East of Fife villages, especially during the winter herring-fishing.

At other places on the east coast, for instance Fraserburgh and Peterhead, the tendency of recent years has been to use the large 60-feet herring-boat for all purposes, including small line fishing. With the increased attention paid to the herring fishing at Yarmouth during the late autumn, and on the Scottish coasts during the early months of the year, many fishermen do not now think it worth while to keep a winter yawl.[1]

'Zulu' Skiffs

Small line boats of the 'Skaffie' model were to be found at most of the Moray Firth ports where 'Skaffies' were employed in the herring fishing, but not in such numbers as to constitute a distinct type of boat. The principal reason, no doubt, was that most of the able-bodied Banff and Moray fishermen preferred to use their big herring-boats for all purposes. But even where, from want of proper harbour accommodation or any other cause, small boats were used, these were often of the 'Fifie' model. Fishermen from as far up the Firth as Tain and Broca have for long been in the habit of getting their small line boats built at Rosehearty, near Fraserburgh.

Since the 'Zulu' was introduced, however, yawls of

[1] A winter skiff of the 'Fifie' model, built at Peterhead in 1890 to the order of a Banffshire crew, measured 37 feet keel and 42 feet 6 inches over stems, 15 feet beam, 5 feet deep, and 15 tons register. Price to carpenter, £71, and for sails, etc., £30. This, of course, cannot be taken as the present cost of a similar boat. The boat was clinker-built; a carvel craft would have cost more.

this model have been coming rapidly into favour, not merely in the home of the 'Skaffie,' but round Aberdeenshire, etc. Fraserburgh fishermen, who used to adhere rigidly to the 'Fifie' model, were among the first to introduce this innovation, and to recognise the suitableness of the 'Zulu' for line fishing.

During the last few years a good many large 'Zulu' skiffs have been built at Fraserburgh and other Moray Firth ports, to the order of the Congested Districts Board for Ireland, for use on the north-west coast of that country. They are used both for long line and for herring fishing, and have given entire satisfaction. Crofter fishermen belonging to the Congested Districts of Ireland get these boats from the Board on the loan system.[1] Skilled fishermen from the east coast of Scotland are put in charge as instructors at the Board's expense for a limited period, after which the crews are expected to be able to manage the boats themselves. At great line fishing most of these boats have hitherto worked in Donegal Bay during the first part of the year, and in the autumn they have been mostly employed in Downings Bay (Sheep Haven) at the herring fishing.

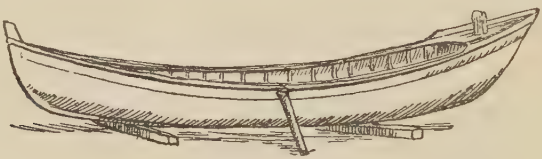
Shetland Line Boats

Among the Shetland Islands small boats of the Norwegian model are everywhere used, both for inshore fishing and for ferrying across sounds and firths; and, until the last quarter of the century,

[1] These 'Zulu' skiffs that have been taken to Ireland ran about 30 feet keel and 42 feet over stems; 12½ feet beam, 5 feet deep inside, and 10 tons register, and are mostly carvel-built. There was, of course, cabin accommodation for a full crew. Cost for carpenter work, £100; and for sail and outfit, £35;—total, £135. Material is much dearer now than a few years ago.

larger boats of the same build were alone used in the long line and the herring fisheries.

The small line boats run from 10 feet of keel upwards, some of the larger haddock boats measuring about 12 feet keel. 'Sexerns' (or six-oared boats) run from 20 to 23 feet. All these boats, however, are much larger than appears from these figures, as both 'stems' are greatly raked. They are also high at the bows and quarters, which helps to keep them dry in a seaway. They are built of light materials, and have very few timbers. Being so light in the frame, they are buoyant and lively, and under skilful handling will come through a good deal of rough



DUNDEE WHALEBOAT

weather. They must, however, be kept end on to a heavy sea; their low waist makes them dangerous in a broadside sea. Where a large herring-boat or a cod smack would be 'laid to' under low sail, Shetland fishermen would consider it safer to keep a 'sexern' under oars, heading straight through the sea. At least one case is on record of a Shetland crew being thus driven to Norway in a six-oared boat, and after they had been given up for lost, they returned home in safety. More remarkable still was the case of two girls from Unst who were blown out to sea when trying to cross a sound with a small boat loaded with peats. They, too, managed to keep

their frail craft afloat till they reached Norway. One was eventually sent home; the other accepted an offer of marriage from a young Norwegian, and remained.

The Shetland 'sexern' is not unlike an ordinary lifeboat in appearance, or the Dundee whaler, and is a survival of the model of the old Norse Viking long-ship. A good many of these boats were still used in the long line fishing at what were locally known as 'haaf' stations, but they have been supplanted by large herring-boats from Aberdeenshire. These 'haaf'

SHETLAND SEXERN

stations were harbours within easy reach of the deep-sea fishing banks, and generally situated near some outlying point.

The local Shetland rig was a square-shaped lugsail, of undoubted Norse origin, a grand sail for reaching. This has to a great extent been abandoned in favour of a lug and jib similar to that used in the Firth of Clyde, the tack of the lug being fixed at the mast. Beating up through narrow channels in cold, wintry weather, fishermen found the latter rig a great advantage, as they had merely to shift the

sheets instead of dipping or lowering the sail every tack.[1]

Norway-built boats used to be imported regularly into Shetland, especially the smaller sizes. To save space in the vessels, they were usually brought across in sections, and put together after they were landed. Ready-made oars were also imported in considerable quantities. Small boats are still occasionally brought over, along with cargoes of timber. As already remarked in a former chapter, these boats are generally built with only three broad planks, whereas a similar boat built in Shetland would have twice as many. As a consequence, these Norwegian boats are very sharp in the bilge, and have not sufficient bearing to give them stability under sail, or to carry weight. They are easily pulled, however, and in fine weather are smart enough little boats, but they require very careful handling.

For the cod fishing, with hand lines, at Faroe, Rockall, and Iceland, large deep-sea smacks are used. They are from fifty to ninety tons register, carry from twelve to sixteen hands, and are in all respects similar to the Grimsby fishing smacks, which are dandy or ketch rigged. In fact, the Shetland vessels are generally bought second-hand from that port.

The inhabitants of the Orkney Islands, though favourably situated, have not given the same attention to the fishing as the Shetlanders have done. The

[1] The smaller boats were built for about 10s. a foot of keel; so with sail complete a 12-foot boat would not cost much more than £7.

A 'sexern' of 21 feet keel would cost before the war £21 for hull and spars; or with sails and rigging, not more than £30. A 'sexern' of 23 feet keel, being fuller built and higher in the wood, would cost about £40 for hull, sails, rigging, and outfit. Very few 'sexerns' are now being built, and there is a probability that this type of boat may become obsolete.

explanation probably is that the land is better in Orkney than in Shetland, and it is much easier to make a living ashore. The Shetland crofter could not, as a rule, make a living off his land; hence the unanimity with which the young men used to take to a seafaring life.

The only type of boat in Orkney that appears to call for special notice is a small boat used for crossing the sounds and for inshore fishing. The model is quite distinct from the Shetland or Norwegian boat,

ORKNEY SKIFF

being very broad in proportion, and consequently very steady under sail. The frame, too, is much stronger than that of the Shetland boat. The sprit rig is generally preferred with two masts and sails, and this was at one time a great favourite not only in Scottish waters, but in those of the Humber, the Mersey, and the Lincolnshire Fens.[1] This rig was very common for small open craft during the early part of the nineteenth century. The standing lug has also been used

[1] See pp. 137, 138, 245.

in the combination of main and fore masts, a light boom being fitted to the mainsail. Competent judges assert that the most skilful boatmen they have seen for handling small boats under sail are the men that have ferried them across the Pentland Firth and the sounds among the Orkney Islands. Fifteen feet of keel may be taken as the average length of this class of small boat.

Orkney herring-boats, as already stated, are of the 'Fifie' model, and either lug or smack rigged. Large smacks used to be sent to the Faroe and Iceland fishing, but none have been owned in Orkney recently, though English smacks and Aberdeen trawlers occasionally land their fish in Orkney.

Firth of Clyde Skiffs

The favourite boat in the outer part of the Firth of Clyde and Loch Fyne is a skiff known as the 'Nabby,' one of the prettiest, smartest, and handiest forms of sea boat to be found.

For herring and great line fishings, these boats run from 24 to 28 feet of keel; but as the stern-post is a good deal raked, the length over all is usually from 32 to 34 feet. The boat is open, with the exception of a small fore-deck, which gives rather limited cabin accommodation to the crew of three or four men. The build may be either clinker or carvel. One very noticeable feature about the model of this boat is the great disproportion between the draught of water forward and aft. A 'Nabby' draws from 1 to 2 feet forward, and from $3\frac{1}{2}$ to 6 feet aft. The rig is a lug and jib, and occasionally a mizen is carried in summer. The sails do not require to be shifted in

'staying,' as the tack is fixed at the mast, which is supported by single stays.[1]

The 'Nabby' bears some resemblance to the Cornish model, and more still to the 'Zulu' of the east coast, only there is less rake on the 'Nabby's' stern-post, and much more rake on its mast. The 'Nabby' build and rig combine to make a very smart, manage-

WEST COAST 'NABBY'

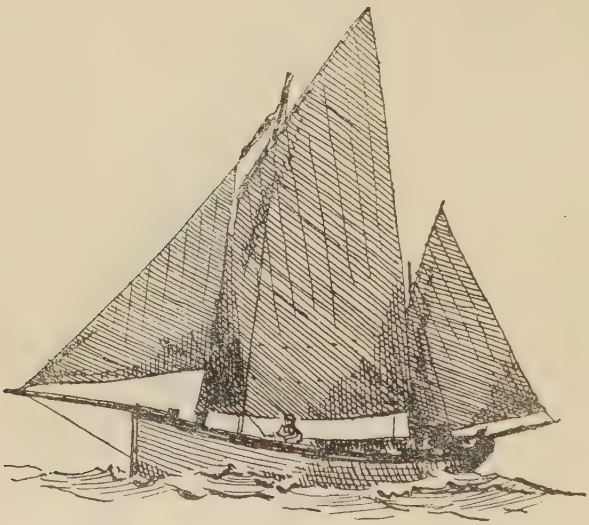
able boat. Four men can work 'great lines' with this boat as long as it is safe to remain at sea. Four men also constitute a boat's crew for herring. Seine trawling-boats, however, work in pairs at this

[1] A good carvel-built 'Nabby' of, say, 27 feet keel, would cost at least £100 from the carpenter; and sails and other outfit would bring the price up to £120 or £130. (These prices are pre-war.)

The planking used is yellow pine (recently Oregon pine has been introduced), whereas on the east coast of Scotland larch planks are alone used in boat-building.

fishing. For drift-net fishing three men are a sufficient crew.

It is interesting to compare these figures with the crew required by an east coast boat of similar size. No such boat would be worked at line fishing on the east coast by less than five, and sometimes six, of a crew, and the requirements for herring fishing would be similarly disproportionate. Thus the earnings of



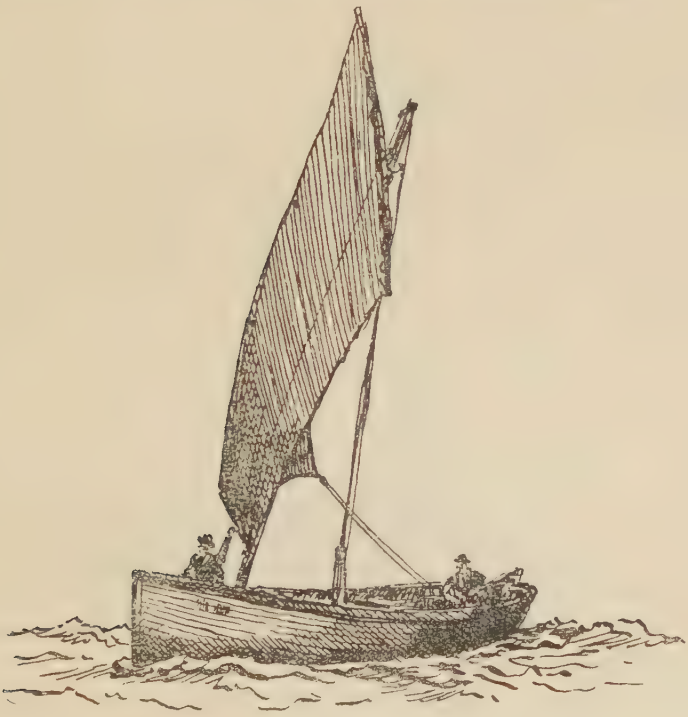
WEST COAST SKIFF, WITH MIZEN

the ' Nabby ' fall to be divided into fewer shares than the east coast boats.

It is of interest to note that the fishermen of Dunure village, near Ayr, have taken to building their own boats. During recent years several finely modelled skiffs of about 25 feet keel have been added to the local fleet, all these boats having been built and fitted out by their owners with the occasional help of their neighbours.

At Dunure and Maidens many of the fishermen prefer square-sterned skiffs, both for herring, great line, and small line fishings.[1]

These boats, as is generally the case inside Turnberry Point, are narrower, lower in the wood, and generally finer in the model than the skiffs in use



LOCH FYNE SKIFF

about Girvan, Campbeltown, and Tarbert on Loch Fyne. The reason is obvious. Girvan fishermen work their long lines in the entrance to the Firth, and

[1] The dimensions are—(1) Length of keel, 25 feet; breadth of beam, 9 feet 4 inches; and depth, 5 feet 7 inches; (2) length of keel, 27 feet; breadth, 9 feet 4 inches; and depth, 5 feet 6 inches.

out halfway across the Channel, in winter and early spring, and this can only be done with an able, comfortable boat. With suitable tides it is quite a common thing to get from twenty to forty cwt. of fish at a single haul in the Channel, and with this weight a small-sized 'Nabby' would be left with too little freeboard in rough weather. The Campbeltown fishermen, again, work most at herring seine trawling; some of them do nothing else all the year round. This is a mode of fishing with more than the usual elements of uncertainty; a crew may go for weeks and earn nothing, or they may fill several pairs of skiffs with one haul of their net. It thus becomes a matter of the first importance that their own pair of 'Nabbies' shall be able to carry full share of the herrings they have been fortunate enough to catch, so the tendency is to increase the size and carrying capacity of these so-called trawling skiffs.

The Dunure fishermen use their skiffs most at the summer drift-net fishing. As they are a few miles from the nearest railway station, the question of catching the market train is always a burning one; hence speed in light weather is the first requisite there, and large sails were the rule until the beguiling voice of the motor began to be heard.[1]

The larger 'Nabby' as now modelled is of comparatively recent date: fishermen say its introduction only dates back to about 1880. Before that time, small smacks, with broad square sterns and pretty large draught of water aft, not unlike the

[1] For a 'Nabby' of 24 or 25 feet keel the following would be a fair average:—Luff (or weather rope), from 22 to 23 feet; leach, about 28 or 29 feet; and sole (or foot), from 20 to 22 feet.

The large jib contains about 28 yards of cotton, 28 inches broad. The mast is generally the same length as the boat is over 'stems.'

present Fleetwood and Maryport shrimpers, were mostly employed in the herring fishing in Loch Fyne, and also in the other lochs up the west coast, as, for instance, in Gairloch and Loch Broom.

In the Clyde these smacks have been gradually discarded in favour of the 'Nabby' for several reasons. Their rigging, boom, gaff, etc., was found to be cumbrous at herring fishing in so small a vessel; while in

CLYDE SKIFF

heavy weather the gaff, sagging over the lee side, caused the craft to labour harder than the lugsail yard did. The 'Nabby,' therefore, appears to be an evolution from the smack rig and from the old small line boats used in this Firth, retaining the best points in the rig and model of each.

This is another interesting instance of the supplanting of the smack rig by the lugsail; of a return

to a rig which, as elsewhere remarked, is among the oldest in the world, and is at the same time among the most difficult to cut, set, and handle with real efficiency. And now comes the motor which is being installed everywhere.

The small line boats on the Ayrshire coast are long, low, narrow skiffs, with lug and jib. There is no great disparity between the draught of water aft and forward, hence the boat lacks the 'Nabby's' stability under sail, but 'pulls' well.[1]

Ballantrae, Stranraer, and Portpatrick

Proceeding outwards towards the channels, we find some differences in the models of boats. At Ballantrae, for instance, the larger 'Nabbies' cannot be introduced because there is no proper harbour, and the fishermen have to launch and beach their boats daily. A skiff of about 22 feet keel, therefore (a cod-net boat, in fact), has to do duty at all branches of

[1] Ordinary dimensions are:—Length of keel, 20 feet, and length over all 22 to 23 feet; breadth of beam, 5½ feet, and depth, 2½ feet. Price to carpenter, about £12 or £13; and sails, lug and two jibs, about £2 more.

Boats used in the gill net-fishing for cod and saithe in spring, and in the turbot net-fishing in summer, are a little larger every way. An average size:—Length of keel, 22 feet, and over all 25 feet; breadth of beam, 7 feet, and depth inside, 3 feet. A boat of this size would cost about £20 from the builder, and sails and other outfit would amount to about £30 more (the prices are pre-war).

These smaller boats are all clinker-built, and they have no decks.

A special size of boat is required for the cod and turbot nets, because the 'Nabby' would be too heavy for the strength of the net, and the line skiff would be too small to stow the nets comfortably. Occasionally in summer small line boats are used for turbot net-fishing. Turbot nets are set in 'trains' of ten to fifteen along the bottom, on which they rest. Cork floats buoy the upper rope upwards for about a yard. As herring drift-net fishing is usually going on in the vicinity, no buoys are used, and the fishermen consequently have to keep careful landmarks, and 'grapple' for their turbot nets daily.

the cod and herring fishings. Small lines are very little used at Ballantrae; and for lobster fishing, as elsewhere, a much smaller boat is kept.

Portpatrick fishermen hardly engage in the herring fishing at all, their principal occupation being long line fishing for cod during the winter and spring, and a few months at small line fishing in summer. Working out into the channel, where the tides are very strong, they have to encounter a very dangerous,

PORTPATRICK LINE BOAT

choppy sea. It is very noticeable that surroundings and conditions similar to those in the Pentland Firth appear to have evolved a boat almost identical with that used among the Orkney Islands and on the Caithness coast, and altogether different from any line-boat inside the Firth of Clyde.

The principal feature of this model is, of course, its great proportionate breadth of beam; the bows and quarters are also full. The rig consists of two lugsails,

like that of the Pentland Firth boats, which also carry two sails, though often spritsails.[1]

Some of the older Stranraer yawls are similar in model to the Portpatrick boats, but later additions to the fleet have, curiously enough, and by some process of evolution which it is difficult to explain, been exact miniatures of the Moray Firth 'Zulu.' The rig is the usual Firth of Clyde rig, a lugsail and jib, with the mast much raked.[2]

These Stranraer 'Zulus' (I do not think this name is used there, however) retain the 'Nabby's' short forefoot and long heel, but above water they are perfect miniatures of the east coast 'Zulu.'

A number of luggers of the Manx build and rig used to be owned at Campbeltown and other ports on the west of Scotland. They were used at the Irish mackerel and herring fishings in spring and early summer, and then at the east coast herring fishing in July and August. Very few are now owned in these waters, fishermen having found the 'Nabbies' more profitable.

Annan Trawling Smacks [3]

The principal fishing in the upper Solway is trawling—for flounders in winter, and for shrimps and prawns in spring and summer. A neat little smack is used, the only craft of its kind in Scotland, so far

[1] The dimensions of the boats in the accompanying sketch are :—16 feet keel, 7 feet beam, and 2½ feet deep inside. The 'shell' costs £10, with £4 additional for sails, spars, and oars.

[2] One of these boats measured 16 to 17 feet keel, 21 feet over stems, 6 feet beam, 2½ feet inside, and 2 tons register.

[3] The average size is 23 feet keel, and 30 feet over all; 9 to 9½ feet beam; 4 feet deep inside; and 5 tons register. The average draught of water is from 3½ to 4 feet aft; the average draught forward about 2 feet. Cost, about £45 to the carpenter, or with sails and rigging complete, about £80 before the war.

as I am aware. With the exception of a narrow open hatchway with very high 'commons,' these boats are full-decked. The decks and high 'commons' are necessary by reason of the dangerous sea that rises in the Solway with high winds and strong tides. The average draught of water is from three to four feet aft.

Two men form a crew for winter fishing, but at the shrimp fishing, where the net is lighter and weather better, the skipper often works alone, or with the help of a boy.

The Annan fishermen mostly make their own sails, as they also make their own trawl-nets.

The first trawl fishermen came to Annan from Morecambe Bay in the fifties, and they introduced these trawl-boats; but both model and rig have been greatly improved since. Most of these smacks are now carvel-built.

Stornoway Yawls

The boats in which Lewis men worked long lines forty years ago have been a good deal superseded by 'Fifies' and 'Zulus,' but a few are still in use, though probably doomed to extinction.

This Lewis boat had a resemblance to the Pentland Firth yawl, but was much larger, say 20 to 25 feet keel, and 5 or 6 feet longer over stems, and broad in the beam and quarters, both stems, especially the stern-post, being raked. The sails used were broad, low lugs. Five or six men formed the crew, and oars were a good deal used when working lines. East coast fishermen used to speak contemptuously of them as 'pikers.' They were quite open, and clinker-built.

CHAPTER VI

EAST COAST AND THAMES ESTUARY

Yorkshire, to its credit be it said, has claims to distinction for other things than ecclesiastical architecture, or even hams and fox-hunting. He that useth the dingy North Sea hath knowledge of Yorkshire's billyboys, its cobles and its keels, all distinctive types of sea-craft well suited to their work.

The Billyboy

The billyboy is generally a flat-bottomed, round-ended craft, whose Dutch descent is scarcely veiled by its paint. Rigged as a sloop, or more often as a ketch or dandy, she carries leeboards, the masts are stepped in tabernacles, and even in these days the square rig on the mainmast is often retained for fair winds. With its clinker build, its rounded ends just fitted to the locks of the Fens, its high sheer fore and aft, and its snub-nosed bowsprit, it may be seen all up and down the English coasts, as well as far inland up the Ouse or in the Trent, with its masts and rigging comfortably housed on deck. It is a handy, seaworthy type of flat-bottom cargo-carrier, well suited to its work about our great eastern estuaries, and not lacking in old-fashioned picturesqueness. In these days of grimy utilitarianism it often lacks the pretty con-

WHERRY

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ceits of ornament still adhered to by the more artistic Dutchman, or by its southern neighbour the Thames

BILLYBOY

OLD GOOLE LEEBOARD SMACK, 1835

barge, both of which still love to flaunt their cheerful green and gold rails across the dull brown waters which they navigate. But, like them, it is generally handled

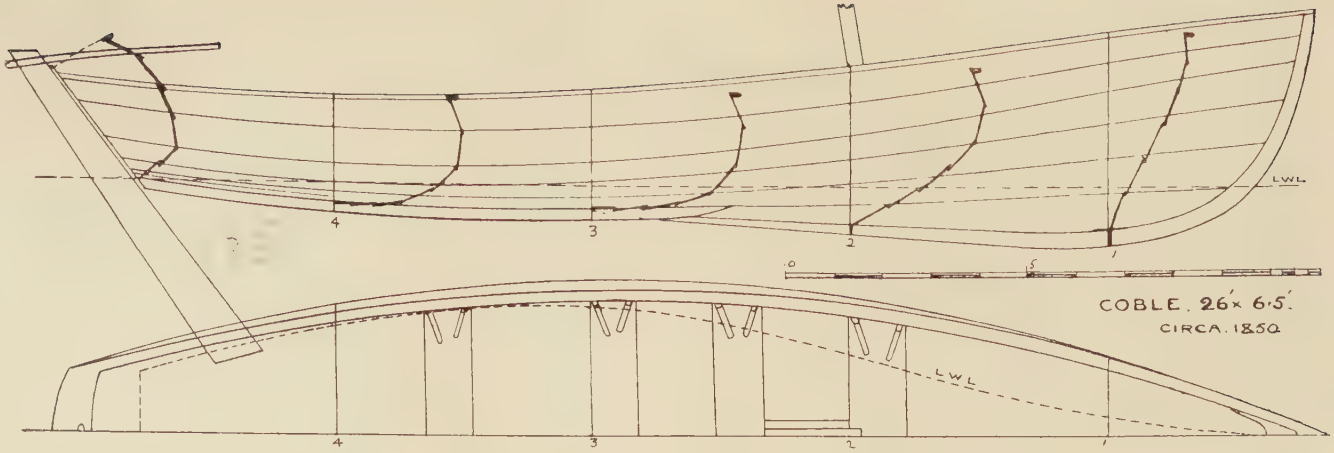
with ease and skill by the skipper, his missus, and the family, with no other crew than the deck-hand in the shape of a curly-haired retriever.

The Coble

The glory of the *coble* Yorkshire shares with Durham and Northumberland.

The ' coble ' is one of the most distinctive types of craft to be found perhaps in Europe or Asia. She was primarily designed for launching off beaches against heavy seas, and admirably she has met this principal requirement. With a high-shouldered bow, with deep grip, she carries a flat floor aft to her low stern, beneath which two ' skorvels,' or shallow bilge-keels, help to keep her upright and to launch her down the beach. A long, deep, dagger-like rudder, drawing three feet or more, is shipped as soon as the boat is in deep water. The deep forefoot is useful in coming head-first off the shore into a breaking sea, being a help in keeping the head of the boat up to windward if the wind is on one bow ; and in beating to windward, drawing as it does from two to three feet, it gives her a powerful grip which, added to the hold given by the deep rudder, enables a coble to be a very fine performer on a wind, especially in a sea-way.

The square-sterned boats are the best performers on this point of sailing, but round sterns have come into vogue on account of their superior running power, the square-sterned boats being very difficult to handle running before a heavy sea. As cobles also generally pull and tow best stern first, the round stern has obvious advantages for the fishermen and the pilot. The southern boats have most of them been built in



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this manner, and with the hollow bow at the water-line. The lean, flat stern is in strong contrast to the powerful appearance of the rest of the hull, and on the whole, therefore, the increasing fashion for round sterns is perhaps a gain from the artistic point of view, for it certainly makes a less insignificant finish to the boat.

The remarkable feature of the coble is that the Yorkshire and Durham fishermen have embodied in

MULE

her, fifty years before the time, the main principles of design, reached after much experimenting in the modern speed motor-boat—the high hollow bow running away to the clean flat sections of the stern. No wonder that the coble has attained such a reputation for speed, especially when reaching with a good weight of wind.

They are clinker-built, with broad sawn timbers of oak or larch, which give them a curious angular

section; there is a pronounced tumble-home of the topsides, and the planking is finished flush with the stem. The gunwale is worked outside instead of inside the top strake, and the thowl-pins and pins for belaying halyards, etc., project on the under side. With these characteristics, and the broad bands of light colours with which they are daringly painted showing up their

COBLE—REEFED

bold outlines, these boats are beautiful creatures to meet at sea alive with wind and motion.

Their rig is the simple old brown-tanned dipping lugsail, set on a raking mast. A small jib is often used in fair weather, and the racing cobles at Whitburn go in for a mizen also. But this sail is of little use upon a wind, except to balance an extra large jib, and is therefore not in general use. The mast is given greater rake for every reef taken in the mainsail; and with a reef breeze, and her mast raked from 8 to 10

feet, the coble will lift over anything in the shape of

A HERRING MULE

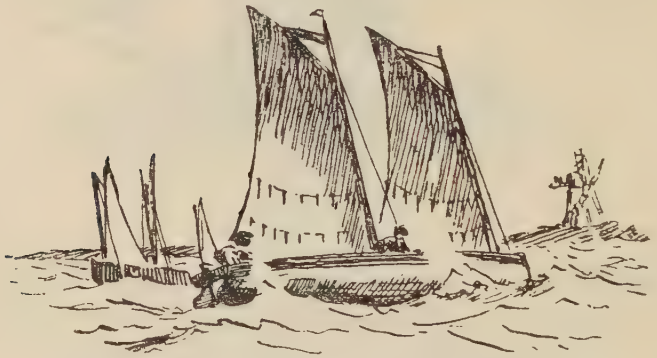
a head-sea, and stand almost any weather if kept by the wind. At such times the short mast is set, and

HUMBER GOLD-DUSTER

the coble is seen to her best advantage; she is sailed by the sheet, and never luffs to the stiffest puffs.

The coble seems to have followed the fate of nearly all the most distinctive types of boats in its increase of size. The *Sailor's Word-Book*[1] gives the general size of the coble as 20 feet long by 5 feet beam, and other old writers speak of it as a 'small boat.' Yet the coble of to-day is usually ten to a dozen feet longer than this, and from 7 to 10 feet beam—a size not exceeded by many sea-going open boats.[2]

While the bilge keels and tumble-home of the top



OLD TRENT AND HUMBER BOATS, 1835
(AFTER SIR W. WARINGTON SMYTH)

strake of the coble are very suggestive of Dutch origin, there are certain points in which this boat

[1] By Admiral W. H. Smyth, published 1867.

[2] Dimensions of cobles :—

COD, LING, AND HADDOCK FISHERY.	HERRING FISHERY.	WHITBURN COBLE.
Six lines, 2 miles in length.	Carrying 30 nets, 180 feet by 3 feet.	
3 tons capacity.	9 tons capacity.	
Length . . 28 feet	33·75 feet	31 feet
Beam . . 5·5 ,,	10 ,,	7 ,,
Depth . . 2·3 ,,	4·75 ,,	2·5 ,,

Crew—3 or 4 men.

The length of mainmast is generally about a foot shorter than the over-all length, and that of the mainyard roughly half that of the mast.

seems to retain some relics of distinctly Norse influence. The simple form of the pins set under the gunwale for belaying halyards to, the flat shape of the loom of the oar and its method of shipping with an iron ring set over a single thowl, as well as the flat head and low peak of the sail, and the light shades of green and blue used in painting the hulls, all have a flavour of what one meets to-day on the Scandinavian seaboard.

The Keel [1]

This name is now applied in Durham and Yorkshire to a class of flat-bottomed barge navigating our north-eastern rivers. The Norse origin of the simple square rig in vogue is obvious to all who have seen the old-fashioned Norwegian coaster or the Nordland boat, running or beating among the northern islands. The tall light mast carries a simple squaresail. The main halyards tie is of chain, and leads through a sheave below the main rigging, and aft to a purchase worked by a small hand-winch in front of the helmsman. In fine weather a small square topsail is carried, hoisting to a sheave in the masthead. A pair of shrouds on each side, and a strong forestay, form the only standing rigging; by means of the latter and the windlass the mast can be quickly lowered and raised again, all standing in shooting bridges.

[1] 'An old British name for long vessels, formerly written *ceol* and *cynlis*. Verstegan informs us that the Saxons came over in three large ships, styled by themselves Keeles.'—Admiral W. H. Smyth.

Swiz. *ceol* = barge or small vessel.
Iceld. *kjoll* = barge or ship.
Dan. / Swed. *kiel* = vessel.

The term is known for the square-rigged barge from Norfolk to the Tyne.

The keelmen agree that the square rig is the simplest and handiest for its purpose, and is preferable to a fore-and-aft rig for inland navigation. Its main disadvantages are felt when tacking. For this the two hands forming the crew must be on deck. As soon as the ship is round, and the sail well aback to pay her off, the sheet and tack are let fly, the lee sheet and weather tack rope are quickly hauled in as the sail swings, through blocks on the gunwale which

HUMBER KEEL

lead to small hand-winches stepped for the purpose on each side of the long main hatchway at the fore and aft ends of the vessel. The tack is hauled down taut, while the sheet is trimmed to the wind; this often cants the yard until it looks like a square-headed lugsail. The lee and weather braces are in one piece, the bight being overhauled by the helmsman to brace round the lee yardarm. In going to windward the weather leech is often tautened by a

bowline leading forward, and the keelmen claim that when on a wind they can look a point closer than any fore-and-aft rigged vessel; and any one who has seen them beating down the Humber in a strong easterly wind, will agree that on the whole they have good reason to be proud of the set of their sails. In a strong wind, however, staying these boats is no child's-play, as the powerful sail is all adrift when being swung and takes charge freely, while before the

KEEL WITH FAIR WIND

sail is reset and trimmed the boat has often made three lengths of sternway. The bow and quarter rails are very reminiscent of Dutch scenery, though an inartistic blue seems to be in favour in preference to the older and prettier bright green with red and gold touches here and there.

For inland navigation the leeboards, anchors, and dinghy are left behind, and ultimately the mast; yards are stowed on deck, sails below, and the very winches unshipped to enable them to pass beneath

the low inland bridges; and thus denuded these boats may be met with at Leeds or Liverpool, or in the heart of Lincolnshire.

They look big and safe enough in these quiet inland waters, but seen off Grimsby from the bridge of a steamer in a big north-easterly swell and a strong breeze, their freeboard when loaded seems none too much.[1]

The keel is undoubtedly the finest inland naviga-

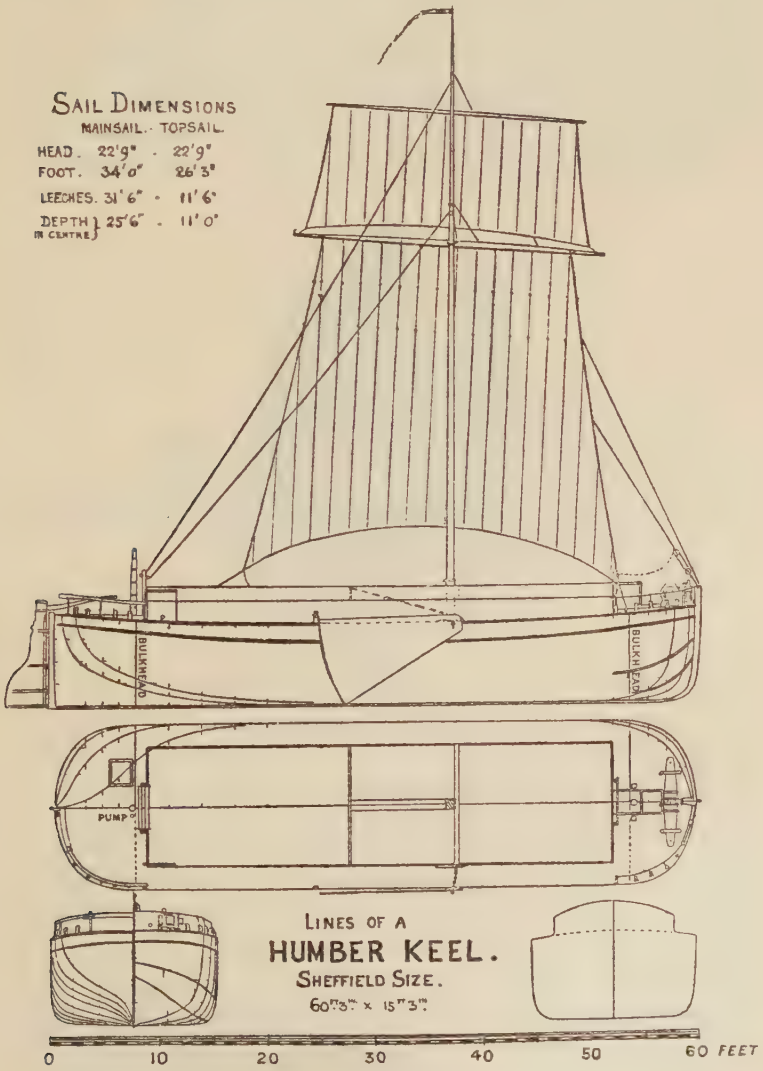
KEEL TURNING TO WINDWARD

tion boat we have in this country. Inland navigation, except in the Fen counties, is not nearly so developed in England as it is on the great inland waterways of the Continent, and naturally so. But while making due allowance for the smaller size of our rivers and canals, the ordinary canal-boat is a sorry piece of

[1] The usual dimensions are about 58 feet by 14 feet 6 inches by 5 to 6 feet draught when loaded, and they carry from 70 to 80 tons of cargo.

naval architecture at the best, and the keel is a refreshing change.

The barges used in the Mersey are, it may be



(BY KIND PERMISSION OF THE HUMBER YAWL CLUB)

noted, practically keels in all but their fore-and-aft rig, and their more grimy appearance.

The coal-carrying keel on the Tyne, of which comparatively few survive, has quite forsaken its old square rig in favour of the fore-and-aft sprit main and staysails. In fact, the Tyne keel of the present day is much more like the Mersey barge both in appearance and rig than its sister of the Humber.

It is interesting, historically, that at the beginning

MERSEY LIGHTER

of the last century it was among the Teignmouth keels that centre-boards were first given a trial, about the time that the Admiralty were making experiments with the *Lady Nelson* sixty ton brig; but the centre-board does not appear to have taken on. Owing to the narrower waters they navigate, these boats were always a much smaller class of vessel than the Humber keel now is. Their dimensions were about: length, 42 feet; beam, 19 feet; draught, 4 feet 6 inches;

capacity, 21 tons.[1] It is said that about the forties in the last century, carvel build gave way to clinker building, whence the smaller Tyne wherry. As a rule, development is in the reverse direction, and classes of boats in these isles increasing in size, are apt to leave the clinker for the carvel style of build.

First-cousin to the keel of the north-east coast is the ordinary humble lighter, barge, or flat, variously

THE HUMBLE LIGHTER

called, more variously rigged, but invariably grimy, hard-working, and of little repute.

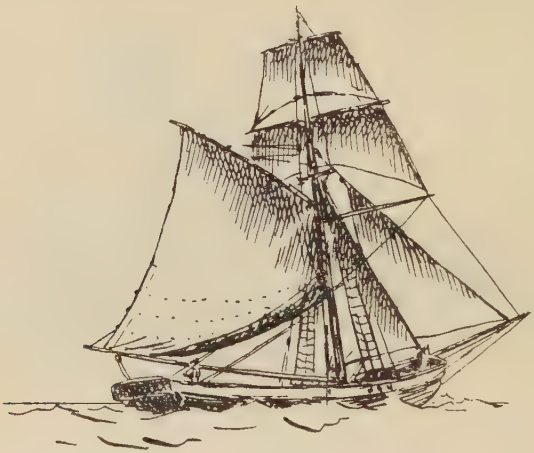
Yet despise it not, for in that low freeboard, square-ended little craft, life, real life, is to be met with. Navigating over wide, stormy estuaries, east, west, and north, in dripping fog-bank and howling gale, in glaring sun and black night, without shelter or help, and but a little simple rope and canvas, two men, or a man and boy, carry thousands of tons of this country's merchandise, year in, year out, with unfail-

[1] The dimensions are from *Notes and Queries* for Jan. 26, 1901, which gives other interesting particulars.

ing regularity and certainty. In simplicity and efficiency they are not excelled.

The Norfolk Coast

Coming southward along the east coast we may pass by the Humber, with Hull and Grimsby, the great northern trawling ports, in these days full of iron steam-trawlers, across the entrance to the intricate channels of the Wash, to the twin ports of



OLD CUTTER, 1818 (AFTER W. DANIELL)

Lowestoft and Yarmouth. With the decay of Harwich as a fishing-station during the last century, these two ports, favoured by their situation well out in the North Sea and near to the trawling-grounds then beginning to be systematically worked, have become the home of the largest sailing-fleet of trawlers and drift-net boats in our islands. At the beginning of the century deep-sea trawling was in its infancy, and before the advent of railways no fisherman went farther from his market than he could avoid. Simul-

taneously with the increased sea traffic in our estuaries steam came in, and while it helped to scare the fish out from many portions of the shoreline, it enabled the fisherman to go farther afield and to use the port nearest to his fishing-ground rather than that nearest to his market. Although Lowestoft and Yarmouth, therefore, are ancient ports, their importance as fishing-stations is of recent origin.

Brought up among the drift-net fishermen of the

OLD YARMOUTH YAWL (AFTER FOLKARD)

west country, one was educated to look upon 'east countrymen,' as the Lowestoft and Yarmouth boats were known, as sacrilegious Sunday-breakers and outer barbarians generally, and we used to criticise them from our small boat much as the small-line man does the trawler, the pedestrian the cyclist, or the teamster the scorching motor. Consequently, when one first moored up alongside their long wharves, it was with some surprise one began to find the Lowestofters much as other sailor men, and East Anglia

not only a delightful country, but one from which several remarkable types of naval architecture have emanated—a fact which argued even to our prejudiced west-country mind a high state of civilisation. In fact, to give the Norfolk coast its due, there are few coastlines of equal length which have done more in this direction.

The far-famed old Yarmouth yawls were unique, and with the exception of some tropical-built canoes,

ARMED LUGGER, 1825
(AFTER SIR W. WARINGTON SMYTH)

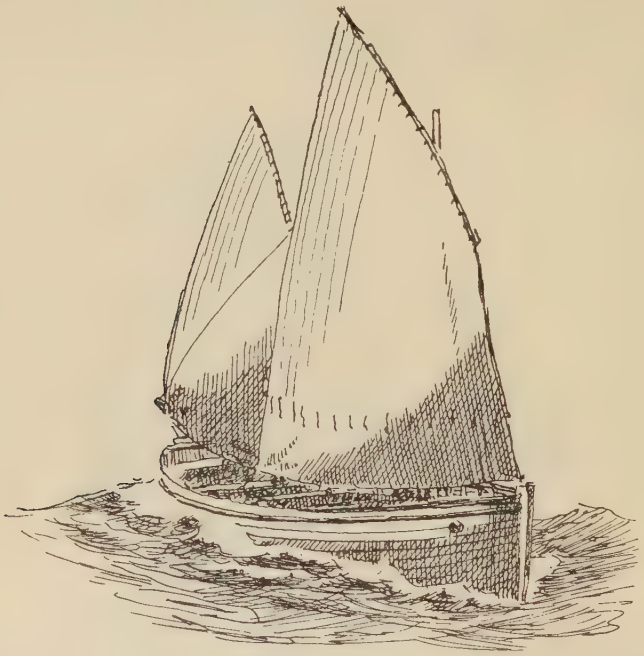
were probably the largest open boats in the world. They were long, narrow, clinker-built boats, stem and stern alike, with very fine entrance and clean run, and often 50 feet in length with 10 to 11 feet beam. The older boats often exceeded 50 feet in length, the *Reindeer*, which challenged the *America*, being stated to have been 69 feet and to have sailed sixteen knots on a reach. These boats were rigged with three lugsails and jib. This three-masted lugsail was a very favourite rig at the beginning of the nineteenth

century among sailors on both sides of the Channel. It appears to have emanated from the Breton coast, and at a time when the French fleets were beaten off the seas by the British, these gallant sailors were able to carry on very harassing warfare with their three-masted armed luggers. The old bluff-bowed king's cutter on this side of the Channel was no match in

OLD KING'S CUTTER
(AFTER SIR W. WARINGTON SMYTH)

speed for these easy-lined French luggers, as the flourishing smuggling trade abundantly proved at an even much later date, and the bellying cut of the fore-and-aft sail of that day made it impossible for our armed cutters to compete with the lug-rigged vessels from across the Channel in weatherly work. Hence it came about that our own navy adopted

the rig for certain classes of small craft, and it was also used in vessels of from 50 to 60 tons both at Whitby and Yarmouth. It was so sufficiently a national rig in the middle of the century that, in Folkard's first edition of *The Sailing-Boat*, this rig was given as being characteristic not only of the



SERVICE 28-FOOT 'CUTTER' (WITH LUG-SAILS)

Yarmouth beach-yawl, but also of the Hastings boats. It is interesting, therefore, to note that in both cases the three-masted lug rig very soon gave way to the present form of main (dipping) lug and mizen (standing) lug, which (with the addition often of a running bowsprit and small jib) may be regarded as the most typical rig of the British fisherman. Even the long,

sharp-lined beach-yawl has discarded the old mainmast, enlarged the dipping-lug foresail, and brought the mizen well inboard, increasing its area to about two-thirds that of the foresail. The existing rig to-day, therefore, is, notwithstanding the far greater length of the beach-yawl, identical with that used for the service cutters in the navy, a fact which goes far to prove the contention of some of my naval friends that this rig is the handiest and most powerful which can be put into an open boat with a strong crew on

LOWESTOFT BEACH-YAWL

board, the latter being a very essential condition to its success.

In the meantime, on the south side of the Channel, the French have loyally adhered to what may be regarded as the national small-boat rig, and the three masts with bowsprit and maintopsail may be very generally seen to this day anywhere west of Nieuport and Blakenburg, alike in trawlers, traders, and men-of-war service-boats.

The great length, fine lines, and shallow draught of the Norfolk beach-yawl would seem to indicate a very

fast and capable smooth-water vessel, and it is nothing less than marvellous that these boats should have been such magnificent vessels in the very heavy weather which was the rule when their crews put to sea. Yet they were in reality designed and used almost entirely for bad weather, their business in life being the succouring of men and ships when no other craft but the splendid sailing lifeboats of the National Lifeboat Institution can put to sea. Such work in the largest and

SMACK, 1820 (AFTER W. DANIELL)

most powerful of the Institution's modern lifeboats is dangerous enough, but in a big open boat such as the beach-yawl, in the confused and dangerous sea which runs in heavy weather along the banks off the Norfolk coast, it calls for greater nerve and smarter handling than any salt-water job known to seamen.

Before the days of the National Lifeboat Institution, the whole of the life and property-saving work

on the coast was carried on by the beachmen's companies either in the big sailing yawls or in the smaller gigs. There are now only some half-dozen of these companies left along the Norfolk coast, but they still do their fair share of salving notwithstanding the rivalry of the Institution's fine sailing and motor lifeboats and of the powerful modern steam-tugs, which

EAST COAST DEEP-SEA TRAWLER

also show no reluctance to venture in among the banks if a ship is in distress and there is enough water for them.

While the gigs belonging to the companies pulled from eight to ten oars, the yawls carried crews of between twelve and twenty men, a big crew being necessary both in launching these big boats through

the heavy surf, and in handling sail, bailing, and bearing assistance on board distressed vessels. Nothing is more common than for small coasting-schooners, ketches and the like, to get into trouble for sheer want of hands and weight of bone sufficient to cope with emergencies in a hard wind, and a few strong Norfolk hands out of a plunging beach-yawl have time and again saved crew, ship, and cargo.

Of the fishing-fleets sailing out of Yarmouth and Lowestoft, the drift-net boats are probably the more interesting from the present point of view. While the trawlers, fine, powerful, sea-keeping craft, of from 60 to 90 tons, have developed out of the category of boats and have all adopted, with wonderful unanimity, the handy North Sea ketch rig in common with their sisters from Grimsby and Ramsgate, the smaller 'driving' boats have had a history and have evolved a rig quite their own.

The deep-sea trawlers from these ports are among the finest productions of any fishing industry in the world, but are beginning to give way to the steel steam-trawler which was the production of the last sixteen years of the last century. But the old sailing smacksmen of the North Sea will not be forgotten, even when everything carrying a trawl is under steam, by any one who has seen their fleets and sailed with them. They have set fashions even in the yachting world: the ketch rig is common among yachtsmen now, and even the old habit of carrying a jib-headed topsail over a reefed mainsail, which I can remember hearing stigmatised as 'only a smacksman's dodge,' is now perpetuated with regularity in the smartest of the cruising yachts in a blow.

Although steam-drifters are now coming in, sails

will probably long continue to hold their own in this fishery.

Houldsworth, in his *Deep-Sea Fishing*, 1874, gives several cuts showing the Yarmouth drift-net boat of that day, from which it is evident that, with a few slight differences, these boats were practically identical in rig with the present Brighton and Hastings luggers.

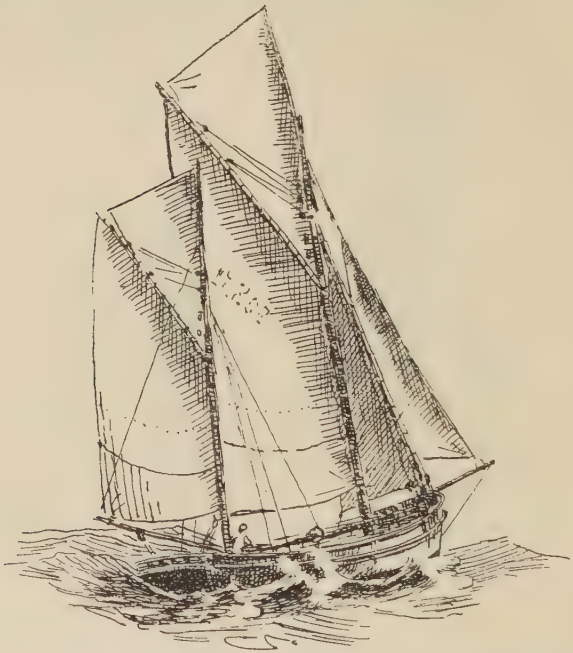
OLD YARMOUTH LUGGER, 1874 (AFTER HOULDSWORTH)

The Norfolk boats, however, have had the advantage of deep-water havens, and have therefore steadily increased in size, while the southern boats are handicapped by the necessity of beaching in the absence of anything in the way of a protected harbour, and have consequently had to be kept down in size.

There is no doubt that one of the contributory causes to the alteration in rig which has taken place

in the Norfolk drift-boats since the seventies, is the Norfolk practice of taking to sea for the season a number of unskilled hands from the shore. These men form the majority of each crew, and are taken mainly for the purpose of handling the nets.

The other principal cause has been the increase in



LOWESTOFT DRIFTER (MASTS SPACED AS IN THE LUGGER FOR HANDLING NETS)

the size of the boats themselves. The disadvantages of the big dipping lugsail become more and more apparent as the size increases, and the danger attending the handling of this sail in strong winds and high seas becomes infinitely increased when it has to be done by an inexperienced crew, or by a short-handed one.

The configuration of the banks off the Norfolk coast also makes a long series of short tacks often necessary, and the fore-and-aft rig, with its quickness and handiness in going about, has advantages on such a coast not to be disregarded.

The result has been that the Norfolk men have practically gone in for the ' split ' lugsail. The luff of the old dipping lugsail before the mast has become a small staysail of almost identical proportions. The

LOWESTOFT DRIVER—ALL SAIL

fore-and-aft mainsail retains roughly the size and shape of the former lugsail as it stood abaft the mast. The foot is cut so that the sail sheets to an iron horse just before the mizen-mast, and no main boom is used. Practically no alteration has been made in the placing of the masts, and consequently the long space between them available for handling fish and nets, which is one of the principal advantages of the lug rig, is retained. The forward rake of the mizen, which has been adopted

in the majority of large mizen-carrying fishing-craft at the present day, has been exaggerated in a remarkable degree in these boats. In place of the old standing lug-mizen this has also been made a fore-and-aft sail, fitted with a boom along its foot, sheeted to the end of the round counter. The convenience about this sail is that, when lowered, it is gathered up by its lacing or mast rings on the mast, out of the way of the crew, the bunt of the sail being easily made up on the gaff, and the boom topped up. Everything is

LOWESTOFT DRIFTER—BAD-WEATHER RIG

thus stowed out of the way, and the long mizen jigger is got rid of.

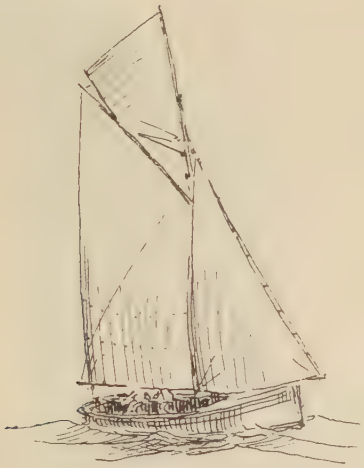
There is a little more gear aloft in this than in the usual lug rig, for the pole-mast is adhered to, and when lying to nets the fore-mast is lowered aft by means of the forestay and a tackle and winch, just as in the case of the lug. There is the additional advantage that the small staysail may be replaced by a balloon staysail, the most powerful of fine-weather sails in light winds, and yard topsails can be easily set on both masts.

Both main and mizen sails are fitted with bonnets

by which the weight and size of the sails are easily reducible in hard weather.

The build of the boats themselves has improved remarkably of late years. The newer boats are large carvel-built vessels of remarkably sweet lines. A handsome round counter is the rule, in place of the old counter overhanging the transom-stern below.

The bow is clean, but full enough to give lifting



GORLESTON CRABBER

power in a seaway. A considerable number of these boats have been built in Cornwall of recent years.

The small local open and half-decked boats employed in shrimping and long-lining are rigged in the regular Norfolk fashion well known on the Broads, namely gaff and boom mainsail, and one large jib set on a longish bowsprit. An enormous gaff topsail completes the outfit. They are beamy boats, with a broad transom-stern and centre-board, and carry their pile of brown canvas well, and in short are a very handy type of craft.

The Wherry

The boat *par excellence* of Norfolk is, however, the 'wherry,' employed upon the inland navigation of

WHERRY—WHOLE SAIL WITH BONNET

the Broad district. She is, perhaps, the best known of our distinctive types of sailing-craft by reason of the accessibility of the Broads to large numbers of our fellow-countrymen who prefer sailing close to a

bank by day, and tying up to a bush in safety by night, to practising the art of seamanship among the uncertainties and excitements of tidal waters. The form of the black, high-peaked sail brings back to many recollections of healthy days among quiet scenes, first impressions of the unreasoning strength of the self-willed jib-sheet, of the obstinacy of the reluctant quant, of the tenacity of certain kinds of

WHERRY—REEFED

mud, or lessons in hard facts about blocks and ropes and saucepans, which are well for any man to have, and are nowhere better got than in the Broads at Easter, or in a wet summer.

It is in autumn, winter, or early spring that the deep-water boat-sailor will most appreciate the qualities of the Norfolk wherry, and the admirable handling to which she is subjected by her crew. When the bonnet is off the mainsail, and a cold

wind howls through the big forestay, the wherry is at her best. For there is skill and nerve required to take thirty tons of cargo and fifty feet over-all length through the narrow rivers of the Bure or Ant in half a gale of wind; yet the wherry's skipper, with the possible assistance of his wife or son, thinks nothing of it, and would feel far less sure of himself if he had thirty miles of comfortable sea-room on every side of him.

The wherry is a light-displacement boat, the first necessary qualification for shallow-water navigation. The draught unloaded is under 2 feet 6 inches, with a beam of 13 feet, and length of about 52 feet. The bow is short and hollow, and the greatest beam is well forward, partly no doubt to carry the big mast, which is placed under a quarter of the length from the stem. The stern is sharp, wherry-fashion, and the run aft is fine.

The mast, a fine stout spar about 40 feet to the hounds, has but a single forestay, by which it is lowered and hoisted in its tabernacle, 30 cwt. of lead bolted to its foot making this manœuvre the simplest of matters. Simplicity is the keynote of the wherry's rig, and a single halyard hoists the long 30-foot gaff. The halyard, by an arrangement seldom seen elsewhere, runs through the large double block at the masthead to a single block at the throat, back to the second sheave of the masthead block, and so to the peak, where a bridle distributes the strain. The arrangement is so simple and efficient that I often wonder it is not more extensively used in small craft carrying fore-and-aft sails. The wherry's sail has no boom, and the sheet travels on a horse on the after end of the cabin-top, in front of the helmsman.

It is a lesson in light-displacement sailing to see the wherryman leaning with his hands in his pockets against his tiller, dodging along the leeward shore, now and then luffing off a little, but mostly depending on the pressure of the water between the mud to leeward and the sharp bow to shoulder his ship off to windward. In this way, with hardly any diminution of speed, the wherry will work along a reach close-hauled, with the wind so far ahead that she can hardly lay it, while a heavy-displacement boat has to tack many times to keep off in deep water, and if she does not completely avoid the neighbourhood of the mud, a big wave drags up astern, emptying and filling the dykes, and deadening her way until she seems almost to be aground.

The other most striking manœuvre of the wherryman is that of shooting a bridge, when he douses sail, lowers the mast, hoists all up, and is under way again in about a minute and a half.

A considerable number of these boats are now built and fitted as pleasure-boats, the long hold and raised hatches making absolutely perfect accommodation. For cruising in sheltered waters it is safe to say that no boat can equal the wherry, but don't ever be beguiled to sea in one. In the smallest wind and sea the wherry loses her head entirely, and develops a suicidal tendency to bury herself and crew.

The Thames Estuary

When Edward the Confessor builded his great church to the glory of God and the honour of the blessed Saint Peter, where Henry's proud Abbey of Westminster now stands, it is recounted that upon the

eve of the consecration, a solitary fisherman was hauling his nets from his boat upon the shallows of the wide river. A venerable-looking traveller hailed him from the shore and asked that he might be ferried across to the new Abbey Church upon the Isle of Thorney, and forthwith as the stranger landed the great windows of the church were filled with light, and the lofty stone vaulting with the glorious music

'PETER' BOAT (AFTER E. W. COOKE, R.A.)

of the Hosts of Heaven. And thus was the church that night consecrated by the heavenly choirs and by the holy Saint Peter himself.

No coin did the saint leave on the afterthwart of the poor fisherman's little boat, but a blessing to all good Thames fishermen, which has lasted down to our own times—until the days when Satan, as some do aver, placed steamboats to ply upon the river,

and stone embankments along its shallows, and turned it into little better than a tidal mill-sluice.

Such is the first authentic record which we have of the little 'Peter' boat, which has been a characteristic Thames type longer than the present Abbey walls have stood. The grateful fisherman after that long-remembered night evidently took the liberty of calling his boat after the fisherman's saint who had so honoured his humble craft, and so the name was handed down, and the simple build of the old Thames fisherman remained characteristic of the river, so that even as late as 1901, when the writer was last at Putney, two weather-worn little 'Peter' boats lay there as it had been eight centuries ago.

In E. W. Cooke's time these little boats were still fairly common above and below Bridge, and he depicted them frequently.[1] They were shorter than the old Thames wherry, more beamy, and higher in the side. They were stem and stern alike, and had no gunwale (wherry fashion), and being sturdy in build could carry sail and stand rough water when required. They had a fish-well nearly amidship, and were probably the first form of 'well-boat' built for fishing purposes among Western nations.

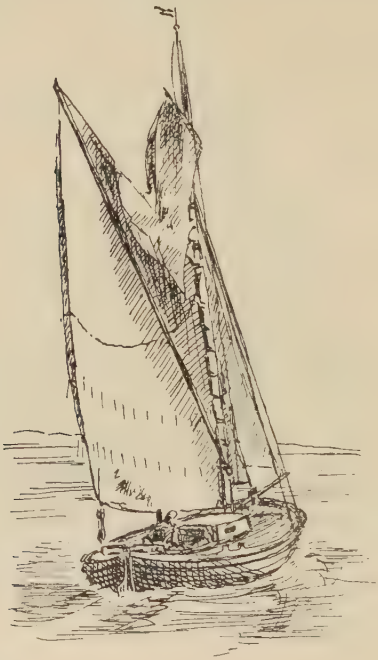
The Hatch-boat

The Thames 'Hatch-boat,' the glory of the Thames before steam days, was an offspring of the humble Peter boat; it had its origin in the need of the fishermen for larger boats in the rough tidal waters of the lower Thames, and a large class of wherry-built sailing-boat with a half-deck and cabin shelter came into use

[1] See also R. C. Leslie's delightful *Waterbiography*. London: Chapman & Hall, 1894.

both for fishing and for general waterman's work among the shipping. The late Mr Cooke seems to have taken a real pleasure in delineating these boats, and there is no doubt that they were among the smartest of the smaller sailing-craft of their day.[1]

Rigged at first with the simple old spritsail and



OLD THAMES HATCH-BOAT (AFTER E. W. COOKE, R.A.)

foresail, than which there is still no better-setting, handier rig for a small open boat, they soon had added a topmast to enable them to catch the light airs floating above the river banks in fine weather. The sheets ran upon a horse, and the mainsail was quickly and

[1] *Vide* E. W. Cooke's *Shipping and Craft.* London, 1829.

easily brailed into the mast. In the larger boats a regular gaff mainsail was eventually adopted, without a boom, and fitted with brails as in the older spritsail, and vangs controlled the gaff.

A small mizen was often added, and running bowsprit, and the boats reached eight and ten tons burden,

OLD THAMES HATCH-BOAT

with roomy cabin and well-space. But to the last even the largest of the hatch-boats retained the beautiful wherry model, the sharp stern, and the yoke steering-gear common to the tribe. And what beautiful cruising boats they would have made to the modern Corinthian yachtsman!

The Thames Barge

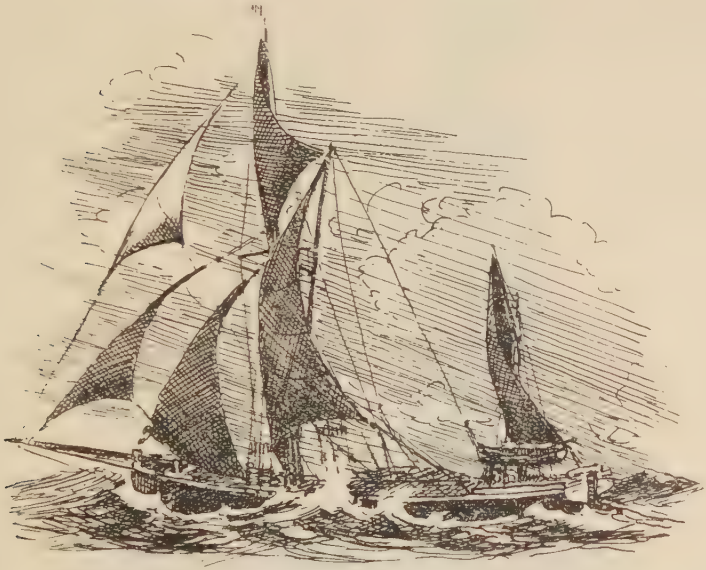
The Thames Barge, one of the most distinctive types of sailing-vessel, is a native of the Medway and London rivers, but claims Dutch descent. The rig is the spritsail of the old Lowland traders, the great convenience of which consists in the fact that the sail is furled aloft, without coming on deck, while the chief weight aloft is brought very low on the mast, to the heel of the sprit. This spar, often 60 feet long, is held at its heel by an iron cap shackled to a shoe

'STUMPY'

upon the mast, and a stout wire heel rope leading aloft. Its weight is enormous, and causes more anxiety to the barge skipper at sea than any other part of his gear, and when the vessel is rolling with a bit of a sea, it is an unpleasant shipmate even to the oldest bargeman. The spreet has a pair of stout wire vangs or 'wanes,' led to each quarter to a small winch and tackle, the weather one being kept taut, while a pair of preventer vangs are led for'ard in sea-going barges to hold the spar when rolling. A powerful staysail sheeted to a stout wooden

horse, and a small sprit mizen sheeted to the long rudder, comprise the sail area of the ordinary 'stumpy' or pole-masted barge.

The larger barges, however, running from 72 to 80, and even to 95, feet in length, carry a topmast, setting a big jib-headed topsail, and are known as topsail barges. The sails mentioned are invariably tanned with a preparation of oil and red ochre, to protect



SEA-GOING BARGE

them from the weather, for they are stowed aloft by brails worked from a hand-winch on deck, and are never covered up. A light-flying jib, designated by the bargeman 'spinnaker,' is set in light weather from the topmast head to the stem. This is generally of light duck; and in all the large new sea-going barges a bowsprit is added carrying a fair size jib as one of the usual working sails. In these vessels the mizen,

instead of being stepped on the rudder head as was customary in the old barges, is stepped well inboard, and is so increased in size as to be of great use if anything goes wrong with the mainsail or its spreet. In fact, these craft have developed for Channel trade into regular ketch barges.

TOPS'L BARGE IN SEA REACH

Drawing about 14 feet with their leeboards down when loaded, and able to float in two feet of water when light, these vessels are without exception the handiest cargo carriers in the world. They are fast to windward, quick in stays, and handy in every point of sailing in any wind. With a crew consisting

only of a man and a boy, you may meet them with all their rigging lowered on deck, at Hampton Court, or making their way, with sweeps out, through the London bridges; with mast on end, and the vane fluttering 70 feet above your head, among the fields of Kent, or working under topsail up a placid creek not wider than your drawing-room; with close-cropped canvas slashing round Dungeness in half a gale of wind, or rolling up mid-Channel merrily. From Bruges to Plymouth, from the Fal to the

WITH BRAILS 'TRUSSED'

Wash, in any town or village with three feet of water, there, likely as not, you will find a Thames barge, with her warm brown sails brailed up aloft, and her gaudy spreet and stern adding cheerful colour to the scene.

As my friend the skipper of the good barge *Mary and Jane* said to me one day, as he looked proudly down at his craft lying with mast and sails on deck, up at Putney: 'Yes, it's heavy gear that is, but me and the boy can put it all on end in ten minutes. It's

a bit of a job for two sometimes in a hurry; but see what she'll do: she'll do anything ye ask in reason, and go most anywheres if there's water enough to wet your boots. She's like a toy, that's what she is,' —which explains in a word the ubiquity of the Thames barge. Deep-sea sailors may look askance at the barge beating down-Channel in half a gale of wind, with her decks all awash, but as my friend says in Sea Reach, pointing scornfully at a high-sided barque

OLD THAMES BARGE, 1820 (AFTER E. W. COOKE, R.A.)

rather tender under upper topsails: 'Lor', I'd rather be in 'er than in that lot, rollin' like a hempty lighter! I knows her anyways, and she'll go through more weather than any man 'as the heart to put her through, she will, and them sailor men'll want to be 'ome 'fore me and my barge takes in our torps'l.'

The form of rig of the Thames barge of to-day has not been long stereotyped. In fact, changes and developments are continually taking place even now.

From old drawings it is evident that the gaff mainsail was at one time much used in this type of vessel, before it became so distinctive, and that the square-sail and square topsail were frequently used in sailing free.[1]

The charming and clever drawings of Mr E. W. Cooke, R.A., the greatest of our boat artists, show that as late as 1830 the flat overhanging Dutch bow, seen still in the dumb lighters in the Thames, was

TOPS'L BARGE, OFF DOVER

general. Mr Pritchett, in his book published in 1899, also shows this shape of bow in his drawing of a Medway barge, but at that time it had been practically out of date for many years. The straight bow of the present day is quite modern, and undoubtedly makes for speed, and gives that patient 'take me where you please' expression which is on the countenance of every decently behaved barge.

[1] The vang, known as 'wane,' was in vogue even with the gaff.

In speaking of the Thames barge a word must be said of her skipper and the boy. So far I have never met an unpleasant or an incompetent member of either class; such may exist, but they are few and far between. They are mostly frank, generous, cheery, and thoroughly at home in managing the towering masses of spar and canvas by which they make their

HAY BARGE

voyages in all weathers by night and day, summer and winter. Like all true seamen, they are always ready to bear a hand, to spin a yarn, or to crack up their own ship. They will go out of their way to oblige you; if you ship for a voyage they drop the 'sir,' and expect you to do your honest share of work. They will afterwards walk six miles with you 'to see you off.' They are easily pleased by any

little show of friendliness, and in emergency they are of all men laconic and swift to act.

Once when beating down Sea Reach on the ebb in a stiff easterly wind, a condition of things which is often trying to upper spars, the weather topmast stay of our barge carried away close to the deck. I looked aloft and saw the topmast whip like a trout rod. But by sheer instinct, without a second thought or a word

HAY BARGE, 1828

spoken, my friend the skipper was spinning his wheel like an express locomotive's driving-wheel, and round she came upon the other tack. The boy hearing the report, sprang up through the fore-hatch, and before I could get forward and had dodged a comber and got round to the lee side, he had secured the broken end, and in a few minutes all was set up again. She was put back on the other tack, and then as the skipper looked approvingly aloft, he took his pipe

out of his mouth, and reflectively made the only remark which passed on the subject, 'Near thing for the topmast: beautiful spar,' and then resumed a yarn about his wife.

But a topmast does not always hold on so long, and when making time into the London river with an

'THAT 'ERE TORPS'L IS ME INGIN.'

easterly gale, under topsail and brailed mainsail, or with 'brails trussed,' as they say—an unusual combination of sail-spread which is in great fashion with the bargeman,—topmast and topsail, with a crash and a tremendous clap, go soaring away over under the lee of the mainsail. The boy looks up the hatchway and smiles; the skipper remarks, 'There she

goes!' but doesn't move his pipe or a spoke of the wheel. There is nothing to be done until they get to shelter, and they know it. But conceive for a moment what confusion and excitement there would have been on a Chinese junk, or a French chasse-marée, in the mob which is usually required to work a vessel of the tonnage of the Thames barge.[1]

The sea-going barges show a tendency to increase in all principal proportions, and more recent craft, such as the *Matilda Upton*, lately in our creek of Port Navas, and the *Everards*, are respectively 86 and 97 feet long, 21 and 23 feet beam, 7·4 and 9·6 draft, and are ketch-rigged with mizen well inboard, and 5000 square feet of sail.

Alone of sea-going craft the Thames barge has a special jury rig for up-river work 'above bridge'—*i.e.*, anywhere above London Bridge. It consists of a light mast, easily up-ended by its forestay to the winch, on which is set a light standing lug generally untanned. This is sufficient with any wind to give the barge skipper steerage-way when working up or down on the tide, to take him through bridges clear of the abutments, and alongside or away from his wharf. The big mast with topmast spreet and all

[1] The dimensions for the ordinary size barge are roughly as follows :—

Mast to hounds	30 feet	40 to 50 tons register.
Topmast to hounds	36 ,,	120 to 125 tons carrying capacity.
Masthead	6 ,,	150 tons displacement.
Length spreet	53 ,,	72 to 84 ft. length.
Diameter	11 inches	14 to 18½ ft. beam.
		6 ft. loaded draught.
		2 ft. unloaded.

Materials—oak and Oregon pine.
- 12 to 17 ft. length of leeboard.
- 8 to 10 ft. drop of leeboard below bottom.
- 7 ft. 6 in. width at bottom.
- 3600 to 4000 sq. ft. sail area.

Cost—about £1100 for first-class barge.

sails and gear are lowered with a tackle to the winch before reaching London Bridge, and can be up-ended again by the skipper and hand for discharging or when coming down river, in a very few minutes. Under this small sail and his mizen with a good weather-going tide the bargeman, when the wind is

THAMES BARGE, UP-RIVER RIG

foul, will work his craft to windward quite effectively. Even in this small gear the bargeman takes a pride, and the sail is generally clean, and with new blocks brightly painted and mast and yard scraped they are quite smart. With a strong wind and fair tide they make good speed through the bridges of London,

and used to give us as boys at Westminster, going up by the old launch *Queen Elizabeth* to 'Water' at Chelsea or Putney, great delight and enjoyment. In fact several of us wanted to fit a similar rig to the school light-fours—a scheme which was severely frowned upon by the rowing coaches.

Your Thames man with his barge is always a refreshing fellow to meet anywhere, all the more if it be, say, in the Scheldt, or down west somewhere round Portland. He is full of good yarns and practical sea lore. 'We just makes what ground we can on a long trip, and if it come on too heavy, we puts in most anywheres. It's an "all-hands" job in a manner o' speakin' night and day from port to port with only two on us; on deck most of the time; not but what she ain't very nice and handy like, with they little winches. So we gets a night in occasionerly, as you might say. When the weather make up, we takes in jib torps'l first—and then the jib. She's snug under mains'l, torps'l, and fores'l—the mizen come in very slick when yer wants her; don't call for more nor one on us. Ingin? that ere torps'l's my ingin—take me up anywheres. Don't call to have no tugs same as they schooners. We can run them off the sea—us two'll carry 160 tons on a 7-feet draft, when the schooner'll draw 10 feet, and them 200-ton steamers wants 10 or 11 feet draft and twice the crew. And when she's heeling loaded she put her chine down and draws 8 feet an' more, and with lee board down 18 feet. You can't beat it, that's a fact. Close winded! Ay! ye can pin her right in the wind and she'll never stop.'

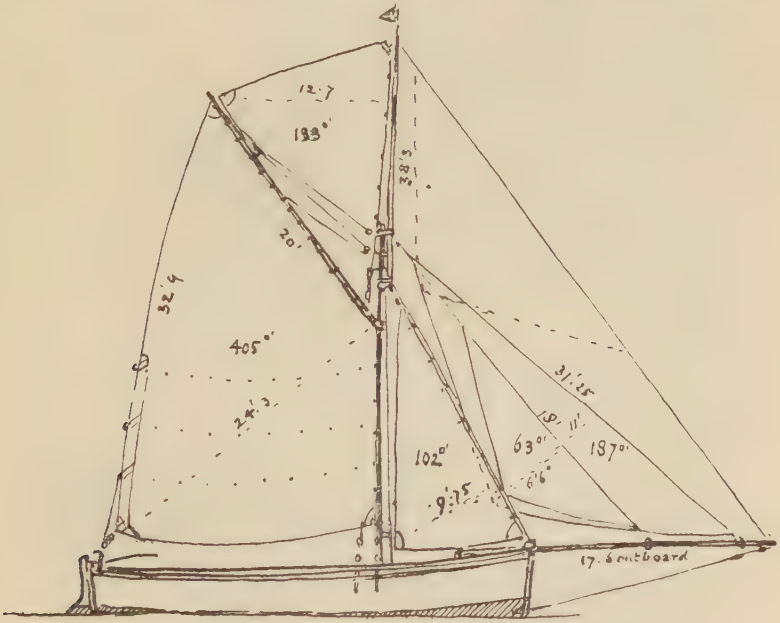
The Bawley

The Bawley is a shallow-draught, wide-beamed native of the Thames, and is well designed for the requirements of a fishing vessel which must knock about the great estuary, dodging along the edges of the innumerable banks in search of fish, tide-cheating over dangerous flats, or beating through rough tidal

BAWLEY CLOSE-HAULED

seas in the open channels. With its high freeboard forward, the Bawley has a somewhat haughty expression of countenance. It has a short lower mast, long topmast, and a very long gaff, giving a nearly perpendicular leech of the mainsail, which has no boom, but is sheeted to a horse inboard. These peculiarities, with the long, heavy bowsprit, do not make the Bawley beautiful as regards its sail plan. Yet no more pleasant-mannered, amenable little craft

exists, and if in a calm the Bawley does look a rather untidy, badly dressed little creature, remember her beauty when, with spitfire jib and half-brailed mainsail, she is soaring over the wicked-looking seas down Swin in half a gale of wind, light-heartedly shaking the combers off her that would puzzle many a twenty-tonner. Then the spirit of the deep can



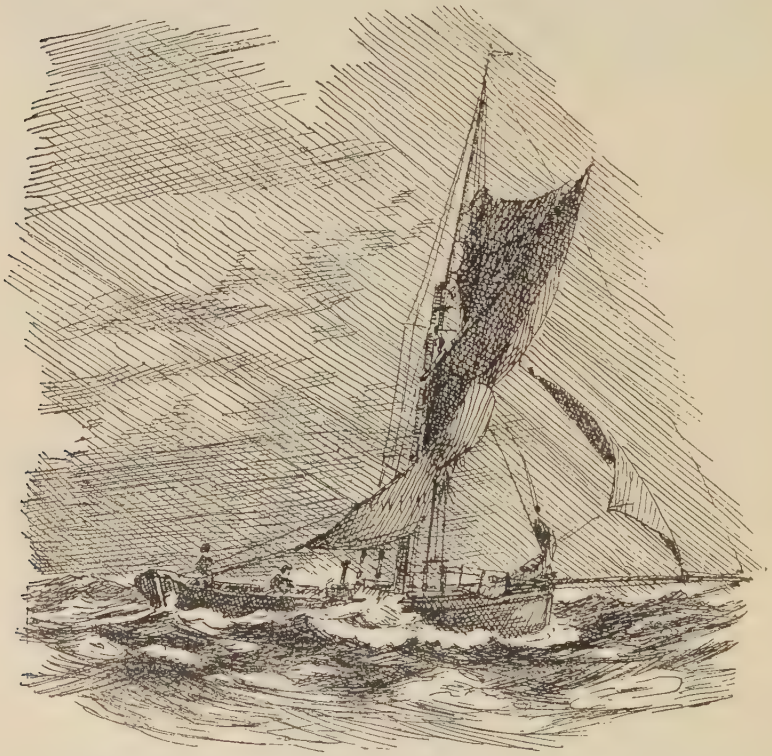
SAIL PLAN OF 32-FOOT BAWLEY.

call the beautiful individuality of a living being out of this ugly, commonplace-looking little boat.[1]

And in the matter of her dress no type of boat is worse used than the Thames Bawley; her poor mainsail has no rest in any weather, and half the time she

[1] If you want to know what a Bawley can do in emergency, read that epic run of the Bawley up-channel in *Gotty and the Guv'nor*, by Arthur E. Copping (T. Nelson & Sons, London)—the best of Bawley yarns.

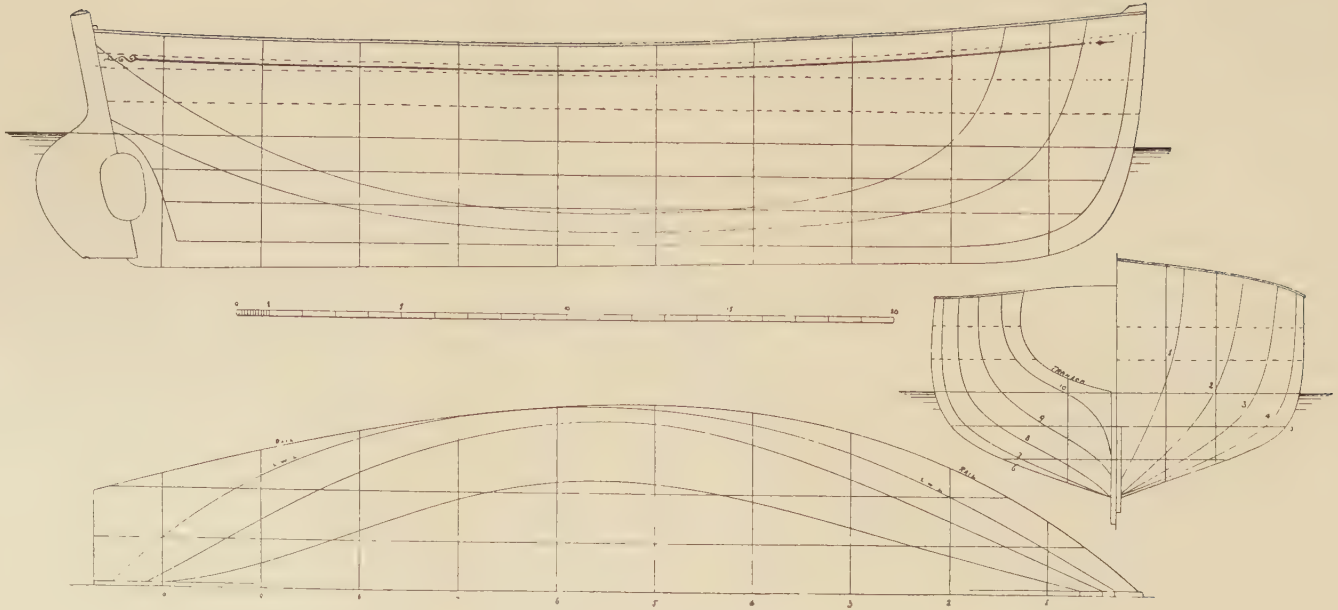
is under way it is being pulled about with brails, and having every trick played upon it that a long-suffering, handy little sail can undergo, brailed up to check the speed of the trawl along a bank, scandalised to a passing squall, set up for a turn to windward, or triced



BAWLEY, 'DOWN SWIN'

up into the most inconceivable shape for a run down wind.

There used to be many more of these boats in the Thames hailing from Gravesend than there are at the present time. The fish have led the Bawley farther afield, and the more open waters of the present cruis-



LINES OF BAWLEY

L., 32 ft.; beam, 11.33 ft.; draught, 4 ft.

Lines by Frederick Shepherd

By permission of 'The Yachting Monthly'

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ing grounds have resulted in a much larger type of boat than was known thirty years ago. Leigh, the Medway, and Whitstable neighbourhoods are now the home of this little boat, and the casual stranger who visits these places at low water may be excused for supposing that the Bawley is a mere kind of mud crab, that spends its time dozing in placid sleep or in meditation. There they lie, reclining at gentle angles on all sides, their heeling masts looking like the

BAWLEY—OFF THE NORE

weathered trees of a small forest bowed in one direction by the wind. But wait for high water, and see them waking as the tide comes in to them; sitting up slowly to the first summons, shaking their mast-heads lazily; and then as they 'fleet' beginning to jump and strain at their unsentimental anchor-chains, looking this way and that as they sheer about, longing to be off, and exchanging who knows what greetings with their neighbours.

Not a few Bawleys have been fitted with a mizen added as a convenience when working nets, but in some cases it has resulted in the mainmast being placed a little too far forward, with a consequent loss of speed: for though the Bawley is not generally fanciful, she is very particular as to where you place her mast, and a foot too far forward may quite spoil her temper when beating to windward. The old

BAWLEY (WITH MAINS'L MADE UP)

Thames boats seldom exceeded 22 feet in length with about 8 feet beam and 3 feet draught, and were clinker built, but most of the new boats are 32 feet long and about 11 feet beam, and draw about 4 feet, while they are wholly decked in and carvel-built. Their great beam makes them delightfully roomy below. A somewhat deeper class of boat is used on the northern coasts of the Thames estuary, at Harwich and in the Blackwater, drawing 3 to 4 feet forward,

and nearly 6 feet aft. The crew generally consists of three men.

A description of the craft of the Thames estuary would by no means be complete without some reference to the smart little cutters used in the oyster and local fisheries, and hailing from Burnham, Mersea, Brightlingsea, and other small ports situated on the

BRIGHTLINGSEA OYSTER-BOAT

Essex rivers. They are not unlike the Bawleys, except that they have somewhat old-fashioned counter-sterns, and boom mainsails of a pretty yachtlike cut. The lower mast is longer, and all the gear aloft is far more taking to the eye than that of the Bawley. They are remarkably weatherly little vessels, and form the recruiting-ground of a large number of our smartest

and best yachting hands, who work their boats in the winter season and go in yachts during the summer. A hardier training-ground than these waters in the winter it would be hard to find.

The centre-board open boats of Burnham, rigged with a balance-lug and jib, were very fine boats of

ESSEX OYSTER-BOAT

their kind, and would have made splendid yachts' boats for owners 'cruising foreign' in big craft. For they were powerful, and of strong clench build, and would have been far better adapted for heavy shore work and long sailing trips than most yachts' boats, and bright varnished as they were they would have needed little done to them.

MOUNTS BAY LUGGER

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CHAPTER VII

THE SOUTH AND WEST COASTS

ALTHOUGH facing east, the bit of coastline between the Forelands is to the sailor rather a part of the Channel navigation than of the North Sea proper.

RAMSGATE TRAWLER

It begins or ends nearly every Channel voyage ; it is alive with the Channel traffic, and lives by the Channel trade, and its lights and shoals are known to every down-Channel seaman.

Ramsgate, a tidal harbour of undeserved ill-repute with yachtsmen, is a trawling port of some importance, and like Lowestoft and Grimsby owes its rise

to the hardy Devon men who came eastward with their boats and made their homes on the coast fronting on the North Sea which offered such phenomenal harvests to their trawls.

The Ramsgate trawlers are of small size, seldom exceeding 30 to 40 tons, and like the old trawlers of Yarmouth and Lowestoft still show a strong family likeness to the Brixham boats. But while the sailing trawlers of Yarmouth and Lowestoft are giving place to the steam trawlers fishing distant seas a thousand miles away, and to the drift-net boats, both steam and sailing, the Ramsgate sailing trawlers until lately held their own, like their sisters of Devon.

Coming west, deep-water harbours are now far apart, and the boating conditions from Deal to the Owers are very much the same. The boat must not exceed in displacement what a capstan can haul up the beach above high water. She must be stoutly built, broad of beam, clench built for preference, and simply rigged.

Hence it comes that with but slight local variations the short boats of Deal, Dover, Hastings, or Brighton all bear a familiar resemblance.

The Deal Lugger

Perhaps most famous of them all is the Deal lugger.

The old 'cat' or three-masted Deal lugger, which used to take off anchors and cables to the sailing fleets of old which sought shelter in the great roadstead of the Downs, is now but rare. In these days of steel and steam, patent anchors and steam winches, there is very little demand for such forms of assistance from the shore, and the smaller and handier galley punt now meets most requirements.

But these Deal luggers, although rarely seen now, will ever remain famous in the annals of the sea. They have been connected from time immemorial with that famous roadstead of the Downs, and with the historic Goodwin Sands, which form at once the eastern protection and the peculiar danger of the anchorage.

They have witnessed the early sea-fights between French and English in the thirteenth century, and

DEAL LUGGER HOVELLING

the battles of Van Tromp and Blake which gave the mastery of the sea to England.

They have seen the victorious British fleets from that day to this going and coming, and have carried succour to thousands of ships, both steam and sailing, year after year, by night and day, in the dreadful gales against which the anchorage only forms at best a partial protection. And more than this, manned by their intrepid Deal crews they have left their legitimate work, and have risked all in saving ships and lives from the appalling fury on the dreaded Goodwins.

These sands, cast up and maintained by the meeting of the Channel and North Sea tide-streams which eddy round this spot, rise straight out from seventy to ninety feet of water. By the tremendous surface wash of the sea and the strong tide-streams running violently and varying in direction with the hour of the tide, they are kept shorn down to some ten feet below high-water level. Hard as they appear to be in some places, they yet rapidly swallow up every wreck which gets upon them, and every beacon which has been erected in the vain hope of providing a refuge on their treacherous surface.

No more dangerous work exists in the world than the rescue of men from a ship which has once beaten in on the surface of such shallows as the Goodwin. The true power and horror of a long line of heavy breakers, rising up in foaming cataracts twenty feet high and thundering forward at thirty miles an hour as their momentum is checked by the sands beneath, can only be realised by those who have once been among them and have survived. Huge seas breaking and roaring in across the wind, their tops blowing away in sheets of solid water to leeward, and anon leaping forty feet into the air as they meet the big line of breakers, add to the terrible danger of any lifeboat or other which dares among them. A cross tide-stream running at four or five knots, the dense drift of sea-spume, the stinging rain, the gripping, shrieking wind, and the thunder in the canvas, all add to the appalling confusion.

Yet in such scenes, before the day of the splendid blue-hulled lifeboats which have earned undying fame in the hands of the storm warriors of Deal, Walmer, and Ramsgate, the old brown-hulled, red-sailed hovel-

ling luggers of Deal [1] brought hope and help to many a fainting group of desperate men clinging to the last spars of their once proud ship.

In shore life we record with pride and speedily reward the bravery of a man who gallops half a mile under rifle fire to help a wounded comrade out of action, or who by an instant's presence of mind rescues a score of people from accident or death.

At sea, a dozen men put off in a small open boat from their snug firesides. A black winter night and a freezing gale cannot keep them at home, for they have seen a signal of distress. It is three hours' beat against the sea and a lee-going tide, and they are all soaked and numbed to the bone in half that time. Arrived at the weather end of the Sands, there is no sign of the wreck. The flares are burnt out or washed away. But the men who lit them may be there still: all, or only one. It is an off-chance. But these twelve men are not going to leave that chance. 'Guess we must wait' is all that is said. Then comes ten hours' waiting through the black night for the winter dawn, such waiting as only such men could survive; every minute in every thundering sea and stinging snow-squall threatening death. Then at last in the dawn, 'There she is!' is the cry, and away goes the willing

[1] The term 'hoveller' was in use in the time of Edward III. to denote the mounted coastguards of the period, 'homines ad arma et hobilers,' used for watching the shores, and giving warning of hostile raids in time of war. It is said to be probably derived either from the French 'hobil,' a surcoat, or the old English 'hobbier,' a stout cob, as suggested in G. B. Gattie's *Memorials of the Goodwin Sands*, London, 1893. Knowing how the word 'hoveller' or 'hobler' is used to the present date in some places in Cornwall to denote a boatman who plies for hire and is not a regular fisherman, neither of the above derivations seems very satisfactory. It is a rare word, and it is peculiar that it should be used at the two opposite ends of the Channel to denote practically the same meaning. Is not 'hoverer' as likely a derivation as the above somewhat random guesses?

boat under her close-reefed foresail before the seas, boldly into the breakers towering above her mast, without fear or thought except for those still clinging to the rigging. Yet the work is not done; now comes effort after effort to get near the wreck without smashing up the boat and so bringing death to all. By consummate seamanship and unerring judgment only is it effected, such swiftness of hand and eye, such patience and steadiness of heart and head as would win for this crew unending fame could men but witness it or understand it as they can a land battle or even a football match. This is sport indeed; this is pluck; this is all we venerate, and a good deal more. But these men are of the sea. Six hours later they are getting on dry clothes, and the poor rescued wretches are weeping their gratitude. A paragraph appears in a newspaper—'Great Gale. Gallant rescue; the crew of a barque saved.' And then all is done; the names if ever known are quickly forgotten; the event is buried in a score of others; and football gives way to the cricket season.

Yet among sailor men, ever shifting as they are with their fleets about the world, the Deal boatmen and their old luggers and their newer lifeboats will never be forgotten. They are heroes of the Empire second to none, and like heroes are dumb about themselves.

The old Deal lugger was a bluffer built vessel than its sister the famous Yarmouth yawl. But its rig was the same originally when each carried the old-fashioned three-lug combination derived from the French and referred to elsewhere. The Deal lugger, like the Yarmouth boat, has dropped out the mainmast amidships and retained only the mizen and foresails at either end of the boat.

These boats have always been launched and beached with great boldness up and down their steep beach. They were usually 40 feet long by 13 feet beam, and had a small forepeak for shelter. Lying stem seawards, with masts stepped, they were ready for sea night and day at a moment's notice. They were held fast on the inclined ways by a chain roved through the 'ruffles' in the keel. When the trigger was knocked away, with crew on board and mizen

DEAL GALLEY PUNT

sail set, they would shoot down the beach with square skids below, head first into the surf. Often their own impetus was sufficient to take them off through the line of breakers, but with an onshore wind a haul-off warp would be resorted to, the whole crew laying on to it as she went off, thus ensuring her riding into deep water. Then up smartly went the foresail, sheet and halyards being set taut as she drew out.

Landing was even more dangerous, especially in the case of the more numerous and smaller galley

punts, which must often stand off and on for hours before they dare risk a smooth to run in upon.

Surf work of this nature is a speciality, and the Deal and south-coast men are experts at it; but the deep-water sailor, who knows too well the power of breaking water, and has a horror of a lee shore, would, as a rule, prefer any other way to land.

The luggers and galley punts were alike clench built, and very strong to stand the knocking about, in floating and beaching and the strains at sea, alongside

GALLEY PUNT—ON A WIND

ships, or carrying heavy weights in bad weather, to which they were subjected. Both were built of elm and were kept 'bright' and varnished, being thus easily recognisable even on a dark night.

The galley punt is, as its name implies, a boat capable of pulling or sailing. It is smaller than the old lugger, being from 21 to 30 feet in length with 7 feet beam. It is still much used for tending ships in the Downs, landing pilots, and general 'hovelling' work, and the crew of four men may often be away for four days at a time on such service, which may

include a tow of fifty miles or more behind a steamer waiting to take off the pilot. Such work in winter weather may be best imagined.

The mast is placed well amidships, and a long-yarded, square-headed dipping lugsail is set upon it very much like the sail used in the Shetland *sexern* and in the Arendal yawl in Norway. It is a very useful sail, giving great lifting and weatherly power, and is wonderfully handled. The short mast, its position

JIB AND MIZEN

amidships, and its lack of gear make it extremely handy in tending ships.

The dipping lugsail, the simplest in rigging, the most powerful on a reach and the flattest to windward of all known sails, is the sail of the south coast boatman, with few exceptions, from the Foreland to Land's End.

The South Coast

From Dover and Folkestone, now quite a considerable fishing port, westward, the mast is placed further forward than in the galley punt, and more in the

position of the old Deal lugger, with a mizen and a small jib on a running bowsprit often added. This gives one of the handiest of rigs for a comparatively small crew to handle ; it gives an even balance of sail-spread under jib and mizen for picking up a berth or shooting drift-nets ; keeps the boat under way when

BRIGHTON CLINKER-BUILT LUGGER

the big foresail is dipped ; and splits up the sail area handily for reefing purposes in a blow.

Most yachtsmen have met the Hastings and Brighton shore-boats up and down Channel in all weathers, and have admired the power in the strong bluff bows flying dry up and down the steep Channel seas. They are usually easily recognisable by the peculiar little counter built out beyond the transom-

stern, the long pole on the light mizen-mast, and the straight mizen-outrigger, carrying on the line of the gunwale, and never raked up as in the west-country boats.

From Shoreham come a finer, deeper class of carvel-built boat, many of them built down west in Cornish ports. The advantage of not having to seek shelter from bad weather up the side of a steep beach is the greater depth and size, and superior accommodation and shelter at sea, which can be indulged in.

HASTINGS LUGGER

The curious old Brighton *hoggies*, which were common up to the middle of the last century, and were illustrated by E. W. Cooke, have now quite disappeared before the superior handiness and sailing qualities of the south coast lugger.

These boats were quite peculiar, and were the nearest approach in build to the Dutch beach-boats of the Scheveningen coast ever seen on these shores. Like them they were clinker-built, flat-floored, and round-ended, with great beam and strong bilge-keels. They carried a sprit or gaff mainsail, and often a

sprit or lug mizen, with a stay foresail set out on a peculiar flat wooden bumkin, bowsed well down forward. A running bowsprit and small jib were occasionally used.

Some variation seems to have taken place in their rig prior to the introduction of the now usual lug-rigged boats; for while for some time they used the high boomless gaff mainsail familiar in the little Itchen sloops with perpendicular aft leech, in Cooke's

OLD BRIGHTON 'HOGGY' (AFTER E. W. COOKE, 1828)

time they had certainly nearly all adopted a lower cut spritsail and mizen.

A particularly fine, powerful class of open clinker-built yawl is used on this coast for pleasure purposes in the summer, and the splendidly effective build and rig of these boats is often obscured by the nature of the service to which they are put.

The Itchen boat brings us further west to the strong tides and narrow channels of the Solent, where

short tacking and quick turning are a *sine quâ non*, and where consequently the dipping lugsail is no

SOUTH COAST YAWL

OLD ITCHEN FERRY-BOAT

longer suitable. The local rig has always been the gaffsail, or, as in the old Portsmouth wherry, the spritsail, with straight leech up and down and no

boom, which required no dipping in going about, and was light and simple to handle.

The similarity of the sail-plan of the old Itchen boat to that of the service launch and the quay punt and oyster-dredger of Falmouth is somewhat striking. All are the result of a plan designed for somewhat similar objects.

The service launch is fitted with the 'de Horsey' rig, the object of which is short spars and snug sail

SERVICE 40-FOOT LAUNCH

and mast plan all inside the boat. A mainsail with perpendicular leech which is boomless for quick handling, and a fore staysail, are the working sails, topsail and jib-topsail being only adjuncts for fine weather and plain sailing, just as is the case with mizen and jib in the other boats mentioned.

While the Itchen boat was used for fishing and piloting, and was consequently a heavier sea-going boat able to stand up to a lofty mainsail, the old

wherry which plied at Spithead as a ship's tender and passenger boat remained a light open skiff in construction. The centre of effort of its sail area was

SERVICE LAUNCH—REEFED

kept low, as should be the case in all open sailing-boats, and its masts short for going alongside shipping; while for convenience in handling, when loaded up with passengers or luggage, the sails were all inboard

OLD PORTSMOUTH WHERRY

and split up into main, mizen, and fore sails, a simple and handy rig for any class of yacht's or ship's boat.

The Solent men have always been consummate fore-and-aft sailors, and the earliest pictures we have of Cowes Roads show that the local cargo-carrier

was a dandy-rigged vessel as early as the eighteenth century. On a fine morning off Gilkicker Fort I have counted no less than eleven of these boats in sight from the deck at one time.

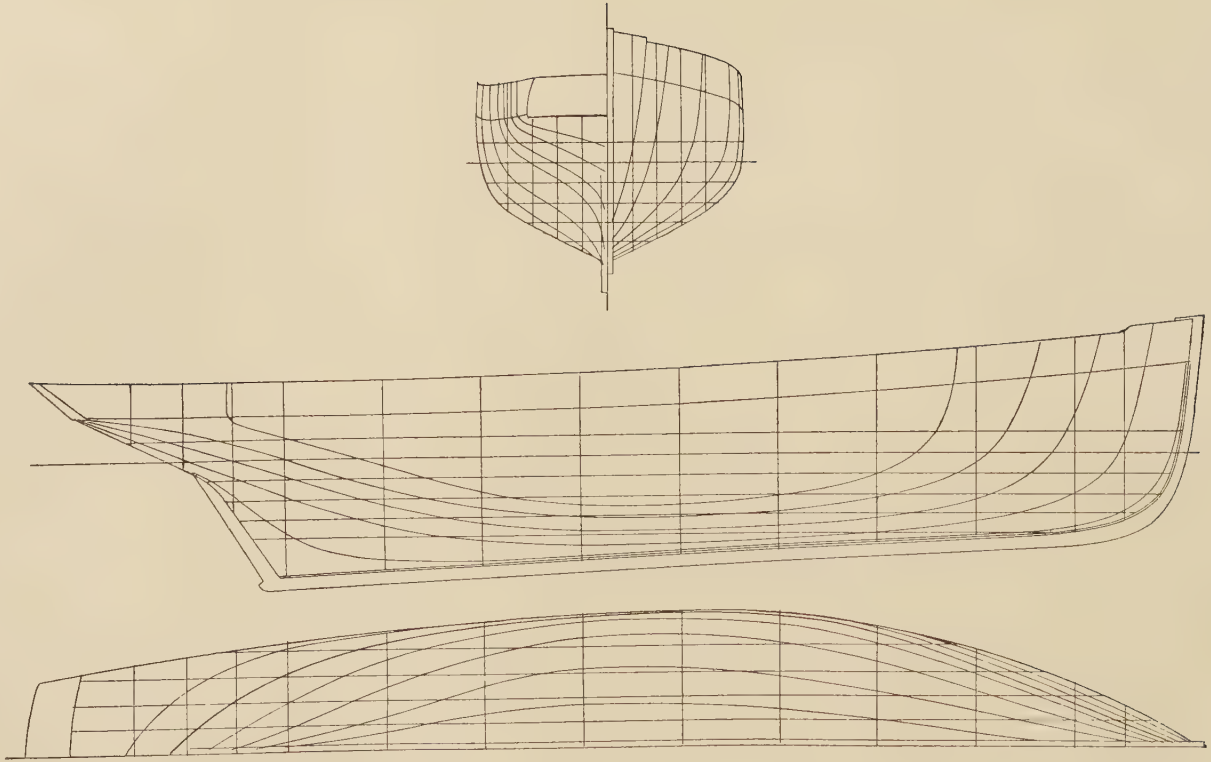
Further west are two ports which have always been strongholds of the fore-and-aft smack, which, as pointed out, has always been the favourite rig of the deep-sea trawler.

Brixham was a fishing-station in the time of the

OLD PORTSMOUTH WHERRY

Armada, and the fore-and-aft rig was probably developed by the Brixham men as early as the sixteenth century. Although records are scanty, it appears that trawling was somewhat extensively practised there at the beginning of the nineteenth century, but the vessels and trawls were all small compared with those of the present day.

Following the intrepid wandering spirit of their race, numbers of Brixham men settled by degrees at eastern ports such as Ramsgate and Grimsby, using



87-TON KETCH CACHALOT (BRIXHAM TRAWLER)

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those places as the stations from which they could more conveniently reach fishing-grounds presenting

BRIXHAM TRAWLER—TOPS'L OVER REEFED MAINS'L

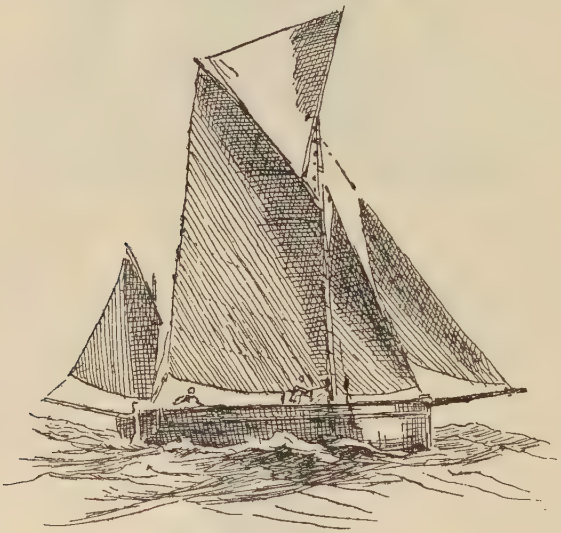
suitable conditions for the use of the deep-sea trawl, which was rapidly growing in favour.

BRIXHAM TRAWLER—BALLOON STAYS'L

It appears more than probable, indeed, that the deep-sea trawl was first worked in the North Sea by

the west-country seamen, and was afterwards adopted by the east-coast men, first in the Thames estuary and ultimately more widely along the coast. To this day the big North Sea trawler differs in sail-plan from the North Sea driving and long-line boats, and is the counterpart of that of the Brixham and Plymouth trawling smacks.

So late as the seventies the Brixham trawlers were all cutter-rigged vessels, from 25 to 40 tons, but since



PLYMOUTH HOOKER.

then the larger class has discarded the long heavy boom for rough sea work, and, in common with the majority of English fishermen, has adopted the mizen. The result is a very beautiful class of dandy-rigged vessel running up to 60 tons and 70 feet in length. The time to see these boats is when they are soaring over a south-easterly sea with a gale of wind, with topsail set, and travelling dry and comfortably at eight or ten knots.

A marked characteristic of the west-country trawler is the forward rake of both masts, which is more pronounced than in those of the east coast ports. The 'mumble-bee,' the small class of Brixham boat, still retains the cutter rig.

The Plymouth men, who followed near on the heels of Brixham in the use of the trawl, have held on to

PLYMOUTH TRAWLER

the cutter rig somewhat longer than the large Brixham boats, and in the eighties as a boy one used to see with admiration these splendid smacks beating to sea in the heaviest weather with the huge mainsails close-reefed and storm jib bending the bowsprit (which seldom had a bobstay) like a trout rod, as the high, straight bow soared over the big Atlantic roll. In the drift-fishing, however, Plymouth men prefer West

Cornwall built boats either with the Cornish lugsail or dandy rig; but they seldom keep their boats or gear in the same smart condition as do the Cornishmen.[1]

Westward of these ports comes the rugged coastline of Cornwall, with its many creeks and coves, all

MUMBLE-BEE

of which give protection to a seafaring population owning and working their own little sailing-craft.

While mining in the Duchy is decaying, and agriculture but holds its own, the fisheries give employment to some 50,000 souls, and a large number more follow the sea in deep-water ships, and especially in

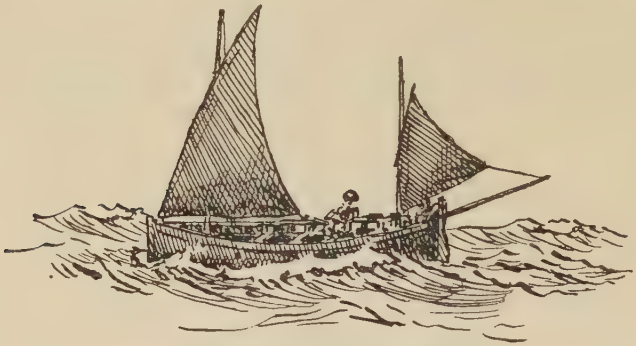
[1] Some of these Plymouth drifters and hookers have caught the eye of yachtsmen owing to their big high bow and clean run and fine sheer. One, the old *Sooboo*, was owned and sailed as far away as Cape Town. They were fine sea-boats and fast in strong winds.

the smaller classes of coast traders. Scarcely a creek or pier of any size but owns its topsail schooner or its ketch, often beautifully modelled and finely canvased, or its old-fashioned smack, engaged in local cargo-carrying to Wales or up-Channel, or in foreign voyages to French and Spanish ports. Just as in the time of Queen Elizabeth, so to this day, though becoming rarer as years go by and the small steamers crowd into trade, these little vessels of 100 to 300 tons journey fearlessly about the stormy western seas, across the Bay, or to the cold North Sea. Their reward is less than in those cheerful times, and nothing is ever heard of their quiet daring. Yet any day from the midst of the winter night-rack a small staggering bit of a ship with three or four feet freeboard comes in dripping to the pier-side, quietly and without noise or fuss, as if from across the bay ; safely moored and with ropes coiled down, the skipper (who is often as not the owner) and his crew leave her to go up to their homes on the cliff above, and inquiry will elicit the fact that they have not been home for months, and have sailed some thousand miles since last their vessel lay in the snug home-berth. A few days, and they are at sea again ; winter, summer, or equinox alike, when the liners put back, and the lifeboats are out, no less than when the white-sailed yachts go forth, they are stead-fast at their work, earning the modest profit or more modest share or wage which is their living.

The Cornish Lugger

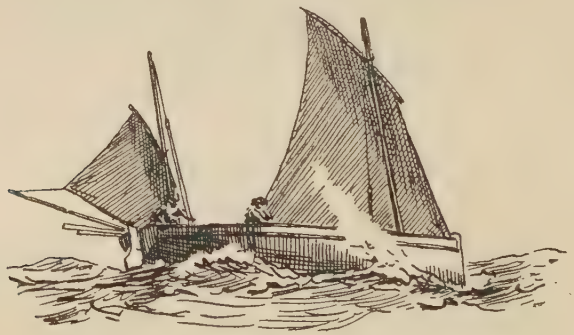
The rig of the Cornish fisherman is the lugsail in its most simple and most powerful form. In the little open boats of 20 feet keel, as in the big decked

boats of 40 tons measurement, the favourite rig is the dipping lug-foresail and standing lug-mizen ; and for the wild seas they navigate no more suitable rig could



LONG-LINER, OFF LAND'S END

be devised. As nearly every Cornishman, whether miner or fisherman, has been brought up to 'knaw tin,' so, whether fisherman or miner, he has it somewhere in his blood to handle a lugsail boat.



LAND'S END CRABBER

I doubt if any finer boatmen are to be met with than the crabbers and long-line fishermen, whose little open boats may be seen hauled up inaccessible cliff-paths in the rough exposed coves among the cliffs,

or ranging wide at sea twenty or thirty miles from their capstan in any weather that a boat may live in, and in a good deal that theoretically it may not.

30-FOOT PILCHARD BOAT

The majority of these boats are about 20 feet keel, some range up to 23 or so, but they become too big to handle in the cove if they exceed that. They have

LIZARD LONG-LINER

straight stems, high sides, beam about one-third of their length, and transom-sterns. They are all open, with four or five thwarts, with light bulkheads underneath them dividing off the ballast-room from the

fish, and so on. The floors inside are generally built fairly high up, and a pump is fitted in front of the helmsman, draining overboard.

The mizenmast and outrigger are generally left standing both ashore and at sea, while the foremast is lowered down aft when the rolling fishing-ground is reached or the boat is grounded in the cove.

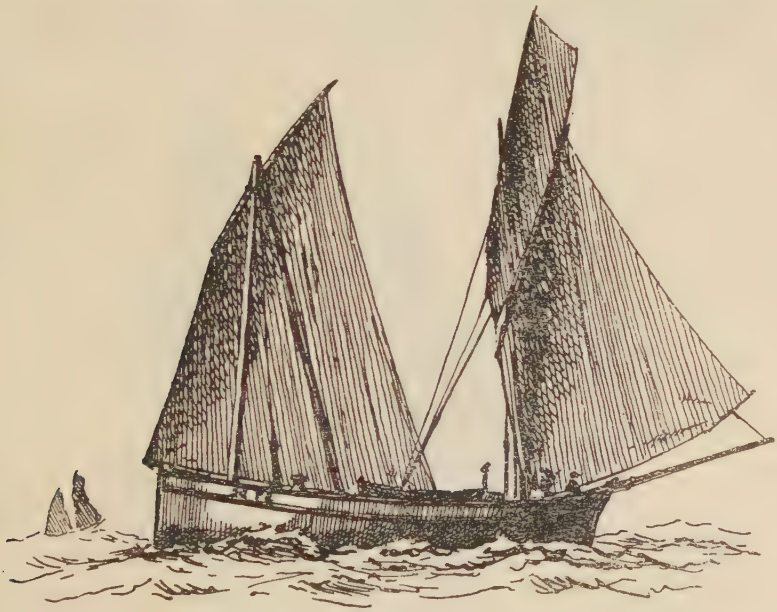
The mizen is often stepped some way inboard, so that the helmsman sits abaft it. As in the larger boats, the sails are seldom reefed, but as the wind

MOUNTS BAY CRABBER (BIG SAILS)

increases a smaller mizen is set and the large one moved forward and set in place of the foresail. As Wyllie has been the interpreter in colour of the Thames barge, so Napier Hemy has made these little craft and the rolling green seas of the Cornish coast familiar to all picture-lovers.

But it is in the more protected ports and bays along the Cornish coast that these boats have been developed into as fine a type as is to be met with in any sea of the world. The fame of the Penzance luggers is world-

wide among seamen, and justly so. But although the boats are registered under the letters P.Z. at the port of Penzance, they in reality hail principally from the three picturesque fishing-ports of Newlyn, Porthleven, and Mousehole. The first of these has won a distinctive name in the world of art, the second is scarcely less renowned for the admirable quality of the



MOUNTS BAY DRIVER WITH TOPSAIL, CLOSE-HAULED

work turned out by its boat-builders, who have supplied distant fishing-ports as far north as the Tyne with some of their finest, fastest drift-boats. Mousehole, if the smallest and least known of the three, could, not so many years ago, at least claim the distinction of being unsurpassed for the strength and variety of its smells.

These boats, and those of St Ives, a little port

quite distinct upon the north coast, have followed the inevitable rule: as competition and the greater distances to be covered in search of fish have forced their crews to go farther afield, they have increased of recent years in size as well as in number, and many of the larger boats run to over 50 feet in length. The proportion of one-third beam is pretty regularly maintained, with a draught of 6 to 7 feet.

Although a certain number of these boats retain

PORTHLEVEN LUGGER

the transom-stern of their smaller brethren, in which plenty of width aft is a desideratum, and some of the larger modern boats have tried the counter-stern, most of them are built stem and stern alike. And it is the fulness and boldness of the curves at the quarters leading off to the stern-post that form one of the handsomest features of the west Cornish boats, and give them a peculiar appearance when heeling even at a considerable distance.

The origin of the build of stern in these boats is

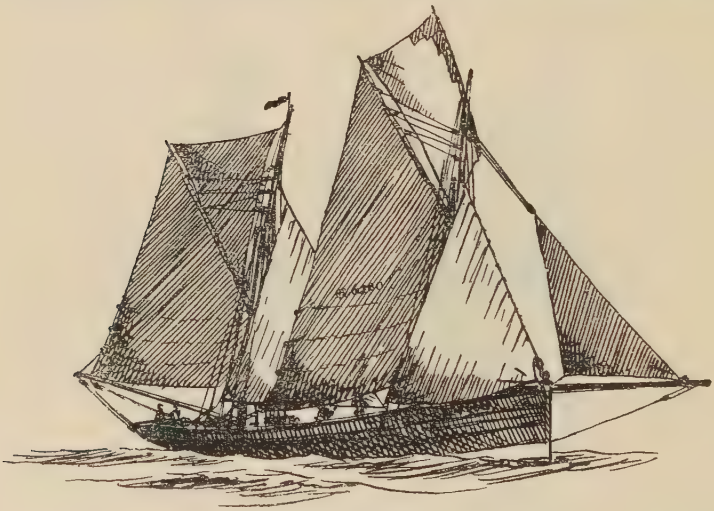
said to be in the smallness of their harbours. Lying side by side they may be seen in Mousehole or Porthleven at any time, so closely packed that there seems to be no room for a single other boat. Yet two or three more will come running in from the offing, round the pier-head, and finally wedging their bows into the angle formed by two sister boats, force them apart, and so make a berth. Such situations make overhanging ends or square corners *de trop*, and

MACKEREL DRIFT-BOAT

explain the strong rubbing strakes which form so distinct a feature of these boats.

The present extensive drift-net fishery of the west had its beginning in the small pilchard ' drivers,' which seldom exceeded 30 feet in length, and were only half-decked. It was one of these boats, commanded by John Hocking of Newlyn, which made the passage to Melbourne in 1846, and took the mails from the Cape. She had to lie to a sea-anchor several days in the westerly gales on the passage from the Cape, but otherwise was never seriously inconvenienced by weather.

The mackerel drift-fishery has gradually come into prominence, and the larger boats are employed in this fishery in the spring. The usual class is 43 to 47 feet long. A larger mesh and greater length of net is used, and the fishery commences early in March, the boats going out to find the fish as far as a hundred miles west of Scilly, or south from the Lizard. At this period a large number of east coast boats from Lowestoft, Yarmouth, and from other fishing-ports



BOULOGNE 90-FOOT DRIFT-BOAT

such as Shoreham, visit the Cornish coast to participate in the mackerel fishery.

Huge French ketches hailing from Boulogne, 90 feet in length, and with crews of whom sixteen may be seen on deck at a time, are also prominent with their gay mizzen-trucks, white painted blocks, white bow wave-line, huge spars, high sides, wide sterns, and forming a most remarkable class of drift-fishing vessel developed from the English North Sea fashion.

Later on, as autumn advances, all these ' drivers ' may meet again up-Channel and off the Yorkshire coast—the little, clean-cut Cornish luggers, or the big east coast dandies, racing the tall-masted Scotch ' Fifies ' in from the offing with their cargoes of herring.

EAST CORNWALL DRIVER

For this fishery another entire set of nets is necessary, with medium-sized mesh.

On the south and east coast of Ireland, too, at this season many Cornish boats may be met with following the herring in company with their Manx brethren.

It is remarkable that these Cornish boats so favourably impress the people of the ports they visit that

there are few places to which they have found their way which do not own some Cornish-built boats of their own. Many a 'driver' I have seen with the letters of some distant Irish, English Channel, or east-coast port upon its bows, but having in its clean, easy waterlines the unmistakable stamp which I knew

MOUSEHOLE DRIFT-BOAT

from boyhood, and inquiry showed she was a native of the west country. Porthleven built for years for Lowestoft and South Shields; while the whole Manx fleet, which when Houldsworth wrote in 1874 was dandy-rigged, and had then admittedly adopted the mizen from the Cornishmen, is now built and rigged exactly on the model of the Mounts Bay boats,

with a few local differences which the keen, practical Manxmen have evolved on their own account.

The long mizen outrigger would appear to be the chief source of weakness of the Cornish lugger, standing as it does alone without any form of stay whatever. In order to be clear of the sea when plunging it is steeved up at a considerable angle by a huge timber chock, generally painted white, like the rudderhead, stemhead, and other points of the top works. Only in two or three cases have I heard of its being

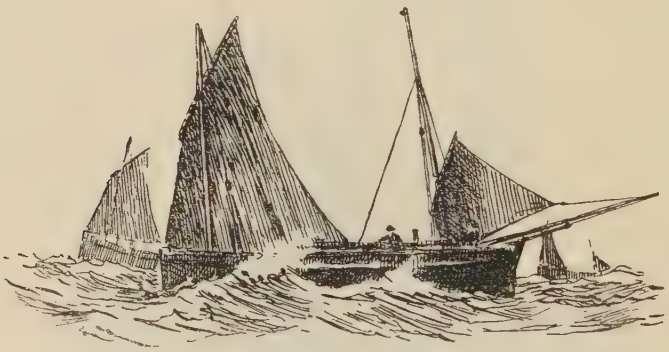
STORM-SAIL

carried away at sea, and in each case it went just outside the gunwale and was easily secured, hauled inboard, and chopped down to fit the heel-iron, a smaller mizen being set upon it, and the whole job completed within an hour of the accident. This outrigger, often as big in diameter as the foremast itself, is always stepped on the port side, and as a consequence the mizensail is always set to port of the mast,[1] while the dipping foresail is of course always set to

[1] This is also the rule in the Manx boats.

leeward. Cornishmen very rarely carry the sail against the mast even for a short board, whereas the Scotch may often, and the Frenchmen constantly, be seen with the tack into the mast, and the sail standing against it. This is largely owing to the greater hoist, size, and weight in the lofty Scotch lug, which makes it much more difficult to handle, while in the case of the French the custom may be derived from the short distance of the tack before the mast of most of their sails.

The mizenmast is slightly shorter than the fore-



A HEAD-SEA

mast to the halyard sheeve; above this, however, is a long pole for hoisting the mizen topsail, which makes it considerably higher than the foremast over all. The mast is stepped a long way inboard and is given a great rake forward, especially in the newer boats, though it is never so excessive as that of the east coast drift-boats, or again in the Scotch luggers. One reason given for this rake is that it throws the sail further inboard, and fishermen believe that the larger the sail area inboard, the greater the speed. It is very possible that bringing the centre of effort of the

mizen further forward conduces to less weather-helm in a breeze, and better balance of sails, and therefore less use of the rudder and more speed. But in the Cornish boats it also enables the mizen outrigger to be topped up higher out of reach of the water without spoiling the flat set of the mizensail.

In reducing canvas for increasing wind, the mizensail is set as foresail. The tack is then taken forward of the mast as far as is necessary to enable it to sheet fair to the foresail sheets without being pulled out of

ST. IVES BOAT, WITH MIZEN TOPSAIL

shape. In the case of the smallest storm mizen being set forward, it generally sheets fair with the tack to the mast. The small triangular 'watch' mizen will then be set aft.

It is noticeable that the West Cornwall men very seldom set a jib, and although there is a stout forestay to the mizenmast they never set a staysail upon it as do the Manx 'Nickeys.' Yet there is no doubt that in light winds the Cornish lugger is undercanvased and cannot compete with the big Lowestoft

dandy-rigged boats, which carry main and mizen topsails, spinnaker, and balloon staysails. The Mevagissey, Fowey, and other East Cornwall boats use a light-running bowsprit and jib very much; such a device does not add materially to the weight or gear to be handled, and especially in reaching is a great addition of power, the jib when well cut being essentially a lifting sail very valuable for speed. In a lug-rigged boat in the east it was my experience that a light bowsprit involving the minimum of gear, with a small storm-jib set upon it, was of great value even in

A LONG-SEA OFF THE WOLF

beating, and involved no difficulty in handling; and one cannot help being of the opinion that the West Cornish boats would benefit greatly in ordinary weather from a perhaps slightly loftier foresail, a jib and bowsprit, and a possible mizen staysail in boats of greater length. A large jib when close-hauled, especially if flattened in too much, will do more harm than good to most boats; a jib needs judgment in setting more than perhaps any other sail except the Chinese lug. But men who take such care of and use their sails so well as the West Cornwall fishermen, could be trusted

to get the best out of a jib if they once adopted it for light weather. Such a bowsprit as is suggested would be a very different thing from the enormous spar with its weight of gear, stays, and whiskers, which was considered necessary to give the required head-sail to the old knife-edge cutters of the seventies and eighties, and which used to cause so much heavy plunging and be such a cause of real weakness to those craft. Nor need it emulate the tree-trunks used by the Boulogne fishermen as bowsprit, which are actually little less than sixty feet long from heel to point. A light-running spar is all that is necessary, and quite a moderate-sized sail would do in ordinary weather.

The Cornish lugsail is probably as near perfection in cut as any sail upon the seas, and while the sail-maker has acquired the art of cutting, the fisherman is no less successful in the art of setting. In fact, of all the fishermen I know, none come so near being yachtsmen as the Cornish. It is well-nigh impossible to see a Cornish sail pulled out of shape by careless stretching: hard, straight luff, full leech, and rounded foot are all there; no concave outlines such as are common enough further round the Channel. It has been left to the motor-engine to ruin the Cornish lugsail by tempting the crews to trust to it rather than to their canvas, with dire results to their seamanship and pride in handling their craft.

An hour after her catch has been landed, all on board the Cornish boat is scrubbed down; not a scale remains on deck, not a spare rope-end is loose; and all the sails are furled and stowed beneath the coat in a big bundle in the lumber irons. Down below equal order reigns, and the visitor is welcomed by a

sense of cleanliness which is not by any means usually associated with fishing-craft. And the clean-lined Cornish boat is a yacht not only in appearance but in speed, and especially in the highest test to which men or vessels can be put, beating to windward in a seaway. I have often seen a Penzance lugger outpointing much larger east coast fore-and-aft rigged vessels, and at the same time outpacing them fast,

NEWLYN BOAT—SMALL SUIT

making a very close thing with a large modern-built yacht. The most inspiriting thing that any man may see, or still more take part in, is the beat-out of the Newlyn fleet in half a gale from the eastward; a hundred or more racing for the fishing-ground, like a flock of hardy, brown-winged seabirds.

And each clean-lined boat has its own story it could tell. They look alike enough at sundown rolling at their nets, just as you and I are alike to the stranger

until he knows our tale. And this is the tale of *St. Michael*, 55 P.Z., and many others are like unto it with variations.

St. Michael was new at that time, and had a counter-stern like an east-country boat's, and but little luck in fishing; small catches and damaged nets too often. There was the skipper, Roger Sennett, my old friend, and there was a crew of six men and the boy; one of whom being ill, Uncle Dick went in his place. Now Uncle Dick had been to South Africa and had made his 'fortun,' such as Cornish miners reckon it. And by reason of his being sick with a dose of malaria which could not be parted from him, he was wearing all that a deep-sea fisherman wears in winter, including vast sea-boots and a complete set of oilskins. It was thirty miles off the Lizard lights when everything was ready in the *St. Michael* to shoot the nets for the night. She was running down-wind with small mizen and foresail, and the big westerly seas rolled up astern, backed by the fierce breeze, which with a falling glass threatens a nasty night for all who must be at sea. And as she was cautiously gybed preparatory to bringing to, to lower sail, the boy against orders got down to leeward, and when the foresail sheet gathered itself up and with the crack of a pistol went rigid as a bar of steel, it caught the astonished boy beneath the armpits and hoisted him instantaneously and irresistibly into the air, shooting him twenty yards away into the glooming seas. Uncle Dick stood on the weather quarter and saw; he turned quickly round, and as he stood plunged over the stern after the boy. The cry of 'man overboard' does not avail to bring a vessel into the wind when running at nearly ten

knots before an Atlantic blow. With helm hard down and all hands hardening in the sheets, she will be four hundred yards to leeward in the time that you can say it. So the sweeps and all available floating stuff which minds accustomed to act impelled overboard after the lost men, were rising and falling, almost lost to sight in the spreading night to windward, by the time *St. Michael* had brought herself up to meet the seas. The quick eyes of the younger hand saw how far still to windward were those two small heads rising, falling, and fighting watery death. Quickly he threw off his clothes, and with the end of a small line in his teeth sprang overboard to join them, and left his four mates to work the boat in time, if possible, over the lost ground. Then came the long struggle in which each simple heart seemed to live a lifetime. While the boy soon had to act rescuer to the old man spent by sickness and encumbered with his vast weight of clothing, the new arrival collected all he could of the floating stuff and fought his way to his fast-drowning shipmates. 'Cheer up, Uncle Dick; hold on, uncle,' kept saying the boy, 'here she comes. I see Roger's face quite plain, I do.' At length all were alongside, but in the heavy sea it was almost impossible to get the exhausted men on board, and when at length it was accomplished with the aid of a tackle, it was over an hour before Uncle Dick returned to consciousness, and the nearest drop of available stimulant was, Cornish fashion, in Penzance harbour, fifty miles to windward. And thither they had to go for it.

That and the like is what *St. Michael* thinks about riding to her buoy at nights. When they get a yarn at a quiet anchorage, others can cap hers for grimness

but not for bravery, and few end so well. Did not the *Lone Star* see the *Mary* founder with all hands close beside her inside the Wolf? Has not the *Blue Bell* twice lost a hand on the passage to Ireland? How many boats can tell of the terrible runs for shelter in the violent winter gales, of three boats pooped and

TRURO RIVER 28-FOOT OYSTER BOAT, RACING

smashed to matchwood by the furious Atlantic combers within two hundred yards of the harbour pier? Such are the secrets of Mounts Bay boats, which they do not brag about, but which one who knows their history is not likely to forget even of a summer's evening when they all go forth glorious in topsails and big new foresails.

And a word for the strong, gentle-hearted, adventurous men who form their crews; learned in the Scriptures and the sea, ignorant of the world; easy-going like all sons of the wave, lazy as the hustled business man counts laziness, but tenacious of convictions; able, very able (but not always willing) to act, ready generally to 'prache' or sing a hymn; slow to leave port, but fearless out at sea; narrow-minded perhaps, as it is reckoned by some; most kindly certainly, friendly, hospitable, and ever ready above all men to bear a hand to him who needs it upon the water. Such are my old Cornish friends, their own musical natures bitten of the old sea spirit. Are they now all to go under to petrol and paraffin?

Falmouth Estuary

Just as the Solent with its strong tides and narrow channels has become the home of a fore-and-aft class of boat, so similar conditions in the beautiful estuary of the Fal, with its many creeks and winding wooded reaches, although set in the midst of a lugsail coast, have made it the home of a distinct class of deep, well-ballasted boat, carrying the gaff-and-boom mainsail, stay-foresail, and jib.

The quiet old-world villages at the head of the many coves which lie along the indented coastline about the Fal estuary and Truro River own a number of these boats varying in size and finish. Nearly all have great depth for their length, straight stem, transom-stern, waterways along the sides, and a fore-deck extending to the mast, and very high freeboard.

Flushing, Pill Creek, Restronguet, St. Just in

Roseland, and half a dozen other snug, wood-fringed anchorages, have their little fleet, lying with bow-ropes among the primroses, and ready for use in the hundred and one ways which a waterside population with the sea instinct know. Oyster-dredging, mackerel-whiffing, long-lining, or crabbing, as the season suits, or even a cargo of wood or a pleasure-party—all have

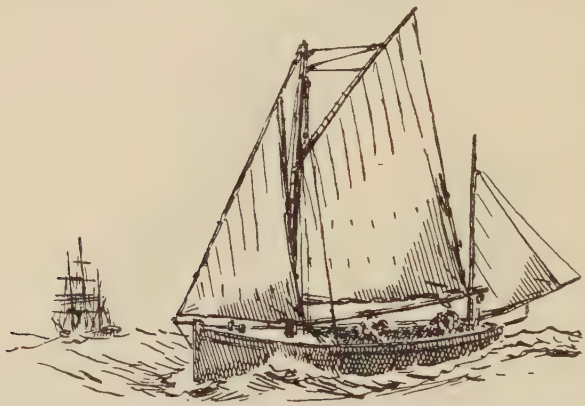
THE FAL ESTUARY

their turn. And better cut, flatter setting mainsails not even the Solent can show. They are just as keen on the use of balloon staysails as are the Brixham men, and a race between these boats is a sight to see, each manned by the skipper's whole family out to beat their neighbours and relations.

The Falmouth quay punt is the well-known class

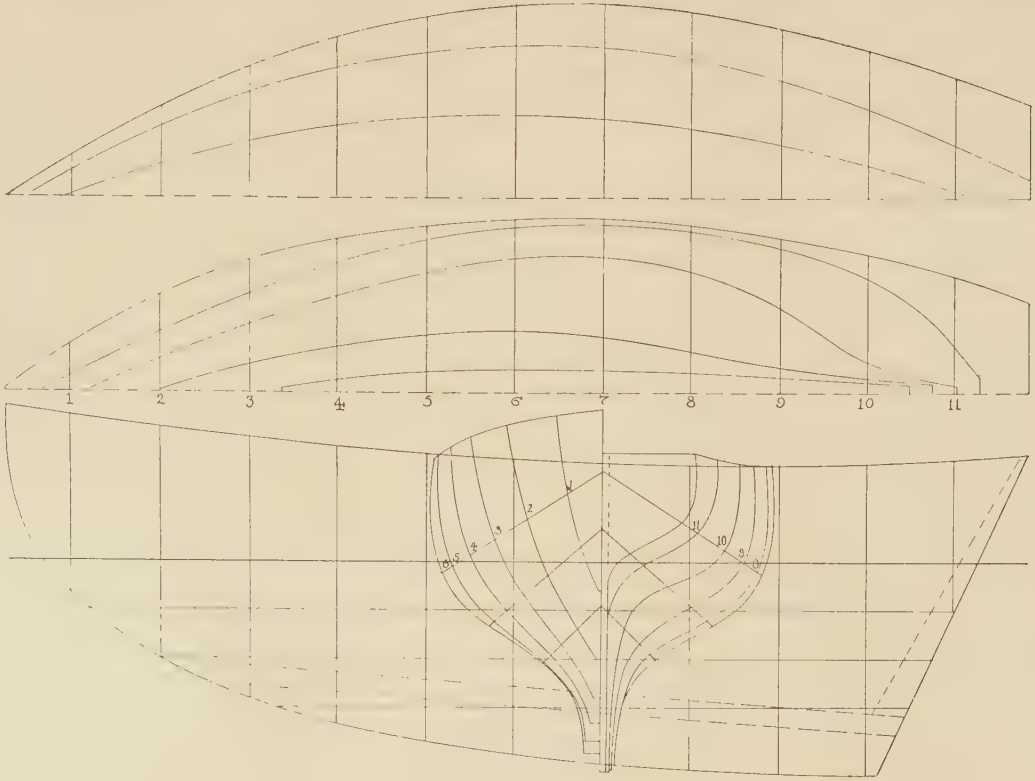
of Fal estuary fore-and-aft rigged boat, and is used for taking off stores to ships lying in the roads of that splendid harbour, and for long-lining, crabbing, drift-fishing, or pleasuring, as the case may be.

In the old days there was always a large fleet of deep-water sailing-ships lying at anchor in the capacious anchorage of the harbour, waiting for orders, and bound to and from such distance ports as Calcutta, Rio or Sydney. The quay punts may still be seen all the year through going alongside ships with any stores which



FALMOUTH QUAY PUNT—WINTER RIG

may be required, such as beef, flour, or coal, or taking off anchors, cables, and rope. As they must go off in all weathers, they are half-decked with waterways round the large open cockpit, and are high-sided, deep-hulled boats; the winter rig is a snug and handy one, consisting of jib-headed mizen, small gaff mainsail, fore staysail set on a short iron bumkin beyond the stem. The gear and rigging are of the simplest, and can be quite easily handled by one man in any weather. For summer wear a longer mast and larger set of



LINES OF QUAY PUNT

By kind permission of 'The Yachting Monthly'

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sails are used, and standing lug-mizen, balloon stay-sail and jib set on a running bowsprit may often be seen. By reason of their straight stem, transom-stern, and very high side, and the comparatively short pole-mast preferred for going alongside shipping, these boats are not very taking to the eye. But when handsomer-looking craft begin to cry for shelter, the quay punt is just beginning to feel in her element, and to show her qualities; and whoever has had experience of these boats when the south cone is

QUAY PUNT—SUMMER RIG

hoisted, when the wind has ' dropped ' or ' backed ' to the south-west, and a ' rubbly ' sea as they know it is running in the bay, is aware that for speed, handiness, and stiffness in bad weather there is nothing of their size to equal them. Quick in motion owing to their short ends and heavy ballasting, they seldom take any heavy water, although they throw it freely. Many hard winter blows they come through safely. The dangerous time is when they are out ' seeking ' [1]

[1] *i.e.* looking out for ships.

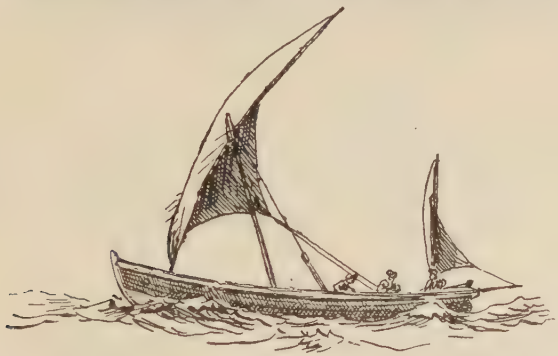
off the Lizard. As the Atlantic depressions approach these coasts, the west and south-west winds with which they are heralded fly suddenly to the north-west and blow with great violence.[1] When caught offshore in these blows it is a hard beat up, and occasionally a quay punt has had to run away east, or has got lost, it was supposed, in the Race off the Lizard. But as a rule, with close-reefed mainsail and foresail, the quay punt stands up to anything, and

QUAY PUNT WORKING

will weather in against the hardest 'puffs' or squalls of the bitterest nor'-wester. At a certain angle of heel the boat seems to refuse to list further, and it is simply a case then of hanging on and not being washed out of her.

[1] Just as in the Baltic the north-wester is reckoned the most violent gale, and in one's own experience more accidents happen with the wind in this quarter than even with the south-west and south-east gales, which often drive in an actually heavier sea, but which have less sheer ferocity and hitting power.

About forty of these boats used to be owned in and about the town of Falmouth alone. Formerly they seldom exceeded 22 feet in length, but the need for speed developed in racing off to ships produced a bigger type of boat, and they ran to 24, 28, or even 32 feet lode-water length. The draught of a 24-foot boat would be nearly 6 feet, beam 7 feet, and ballast about 3 tons, there being generally in the newer boats a considerable iron keel. The large cockpit is used for placing stores in, and about two tons can be carried

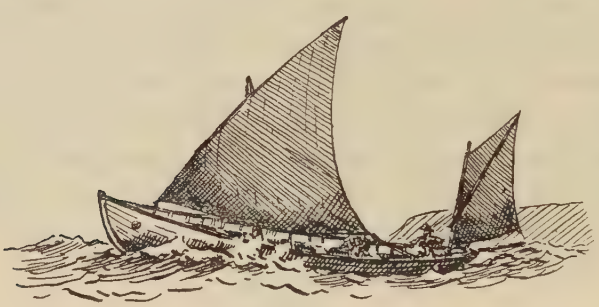


ST. IVES GIG

at a time in the worst weather, while in the summer-time it affords plenty of accommodation for a pleasure-party. The usual cost used to be from £80 to £100 for the hull. With the advent of the motor, these boats tend to increase in size, and to carry a small set only of the usual three sails. Many of the older boats have been fitted with small auxiliaries for use in calm weather, but may still be met with off the land fishing under the usual three working sails of mizen, main, and foresail, the last perhaps with sheet aweather, and going wonderfully dry and easy without

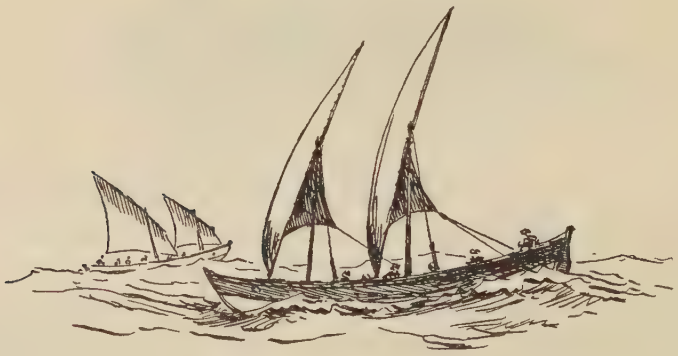
a drop of water on the foredeck even in a hard beat out or home.

Like other Cornish ports such as St. Ives, Pen-



PENZANCE GIG

zance, etc., Falmouth had a fine class of six-oared gigs for pilot and other duties. These boats are getting rare now, but may still occasionally be seen



SERVICE WHALERS

moving very fast with their low, long-yarded, lateen-like lugsail set in a short forward-raking mast.

The small punts or dinghies of Falmouth and other places on this coast are usually rigged with a small standing lugsail right in the bows, and a little

jib-headed mizen—a very handy, light rig for any dinghy for yachting or rough work, placing the steersman well between his sails, and exhibiting fully the value attaching to a mizen for small craft in rough and stormy waters.

These little boats are generally under 14 feet in length and are carvel-built, with a straight stem, sharp entry forward, and flat floor carried well aft. They are used for ferrying passengers, and for dredging oysters and other fishing work. They are a very smart class of neatly built little vessel, and with one

OYSTER SKIFF

or two men are handled in any weather. A dozen or more may be met single-handed on the oyster-beds in the roughest equinoctial winds, kicking lightly over the flying green seas, and no finer display of fearless watermanship can be seen. One of them I once met outside, running in before a strong sou'-wester, with the peculiar sprit mainsail which the western men like, in shape very similar to the old Brighton hoggies, with her two hands in their oilies standing up in her looking out for their crab-pot buoys. How they kept their feet as the tiny craft, with scarcely

16 inches freeboard, rolled and lurched top-heavy before that wind and sea was a mystery, and we watched them with admiration. For we were being shaken off our feet by the violent plunging of our much larger craft.

This spritsail rig, which is a favourite for open boats in the west country, as it used to be in the Thames and at Spithead, has much to recommend it.

The mizen, whether leg of mutton or spritsail, is

SPRITSAIL CRABBER

always a handy sail, and makes up for lack of a long main boom over the stern, with the advantage that it needs no looking after and does not press the boat down. I am aware that some sailors, not accustomed to the mizen, often find it an additional thing which it is a worry to have to think about; but the professional fishermen and those who are brought up to it know its value, and are aware how little looking after it really needs. The sheet can be always let go, and the sail furled standing on the mast in a trice.

The foresail, balancing the mizen, when set on a bumkin over the bows is a lifting sail, and if cut high in the foot will never hold water or press the boat down. It has the advantage of being right forward out of the way, and can be kept standing when manœuvring under oars, or working lines or pots.

The sprit mainsail is unequalled for shape and handiness if properly set. For this there must be a purchase to the grommet at the heel of the spreet to keep it well up. A couple of thimbles spliced into the eye

GERRANS CRABBER

at the throat carry the simple brail which is all that is necessary for taking in the sail. There is no boom, so dangerous and inconvenient in an open boat, but one can always be fitted if thought necessary. The sail is better without, and can be spilled more instantaneously in a squall than when a boom is used.

Although for windward work in open boats the big balance-lug, with its uncompromising lacing to the boom, is undoubtedly the most powerful in fine weather, after an extensive experience with both

from the days of early boyhood, the palm for all-round handiness, and for results under all conditions, must, where open boats are concerned, be awarded to the sprit main, mizen, and fore-sail rig as used in the old Thames hatch-boats, in the Portsmouth wherries, and by the west-country boatmen. And no rig is prettier to the eye when well-cut and made by a good Falmouth or Penzance sailmaker, and fitted in a good centre-board boat.

The iron-bound coast of North Cornwall and Devon has few harbours of note, and the trawling of the Bristol Channel has been in the hands chiefly of the enterprising men of Brixham, who have done much to make Milford Haven a fishing-port on the west as they did Ramsgate, Lowestoft, and Grimsby in the old days on the east.

The Isle of Man

In 1870 the favourite rig of the Manx fisherman was the dandy. Quite a number of boats then owned in the island for the long-lining and drift-net fisheries had adopted the mizen from the Cornish boats which they met when visiting St. George's Channel or fishing in Irish waters. The rig before that time seems, as far as records go, to have been the smack or cutter.

In build and lines the Manx dandies were very similar to the Cornish boats, the sharp stern, full round quarters, and straight bow being almost identical, but it is not clear how far it was indigenous to the island.

In scarcely twenty years, however, the whole Manx fleet changed into the lug rig, and by 1890 it had openly adopted the Cornish style of rig as well as build.

So far the Manx seamen had shown themselves to be capable imitators of a serviceable type of vessel eminently suited to the rough seas about their island. It did not take them long to effect considerable improvements, and in the matter of size they have far outclassed the general run of Cornish boats, running to 10 or 20 feet greater length, and proportionate increase of tonnage, length of net, and number of crew.

A prominent addition to the sail area forming a characteristic feature of the Manx 'Nickey' is the

MANX 'DANDY'

big staysail carried between the masts on the mizen forestay.

It is reasonable to inquire what has made the Manxman leave the smack for the dandy rig, and the dandy for the lugger, thus reversing the development which has taken place at Yarmouth on the Norfolk coast, where the old luggers of the seventies of the last century have given place to the ketch or dandy, not only for trawling but also for the drift-fishing and all purposes.

The adoption of the mizen in the smack-rigged vessel is explained by its convenience for a boat lying to nets in keeping the head to sea, and the superior handiness of the smaller mainsail over the heavier boomed sail of the cutter rig, especially where the mast was made to lower down aft, as is generally done in drift-boats.

The reasons which probably led to the adoption of

MANX 'NICKEY'

the fore-and-aft rig on the Norfolk coast were pointed out above. These reasons did not exist in the Isle of Man, which is surrounded by wide seas where long tacks are made and where rough weather is the rule. The simplest possible form of rig, with the mizen and with the least gear about the mainmast, naturally commended itself. The weatherly quality of the lugsail observed by the Manxmen in the Cornish

boats had much to do with the selection, and as the Manx crews are all seamen to the bone the big dipping lugsail necessary in the larger-decked boats had no disadvantages to their minds, and in fact they handle it, as they do all connected with their craft, in the most fearless and seamanlike manner.

As they increased the length of their boats the

CASTLETOWN 'NICKEY'

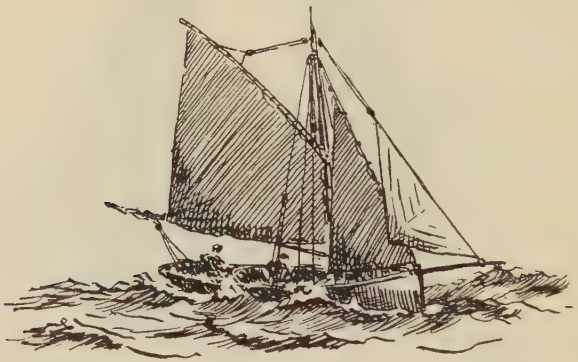
Manxmen soon added the mizen staysail to fill the increasing gap between the foresail and mizen, the greater length enabling this to be done without spilling wind from either sail.

Although the sails are not always made and set quite as well as those of the Cornish boats, and concave foot and leech are often noticeable, yet the boats are among the smartest and cleanest of our

coasts, and running to the size they do they are second to none in power or seagoing qualities.

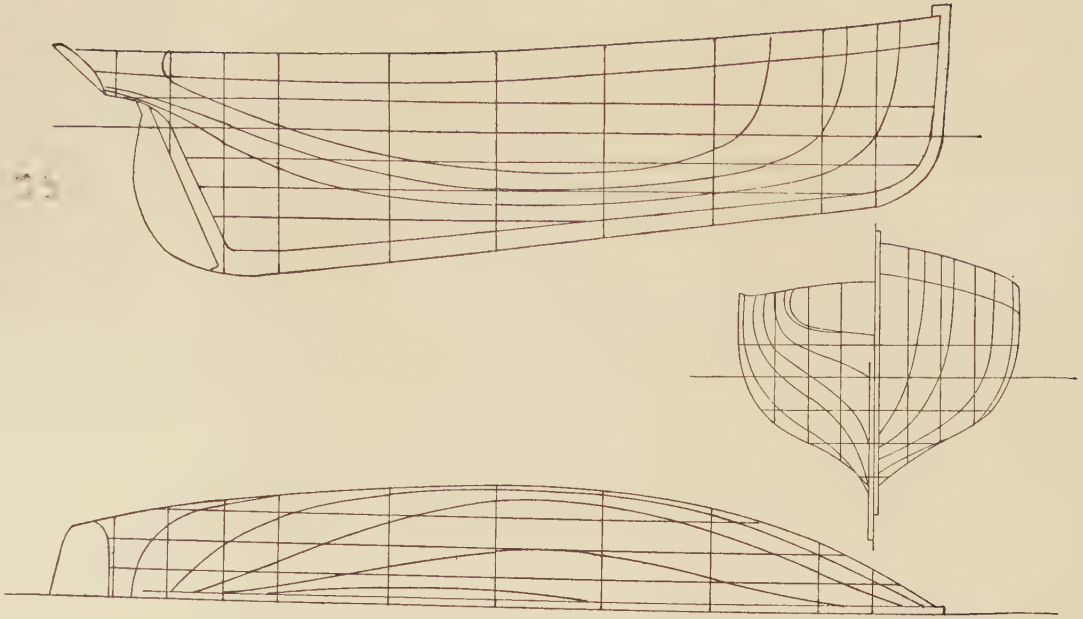
Gallant little Wales does not seem to have given much to the maritime world, except perhaps the coracle. Even the Milford Haven and Tenby craft were mostly of Brixham type and build. The famous Bristol Channel pilot boats, which have made some of the most successful cruising yachts afloat, cannot be claimed as Welsh.

These craft, built mostly at Pill in the Severn (many will remember old John Cooper), and a few



FLEETWOOD SHRIMPER

at such places as Cardiff, Gloucester, Porthleven, and even Hamble, have created more stir among cruising yachtsmen than any other class of working boat except perhaps Colin Archer's Norwegian designs. Between 1912 and 1918 they came into the market as the pilotage had decided in favour of steam, and it is not too much to say that one and all have been eagerly picked up, most of them by yachtsmen of the type who like cruising in an able ship, fast and easy in a sea-way. Some have been altered as regards accommodation, but nearly all retain their original



LINES OF PILOT CUTTER HILDA

Built by John Cooper of Pill

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rigging and sail plan, with the simple three shrouds aside, no runners and no bobstay.

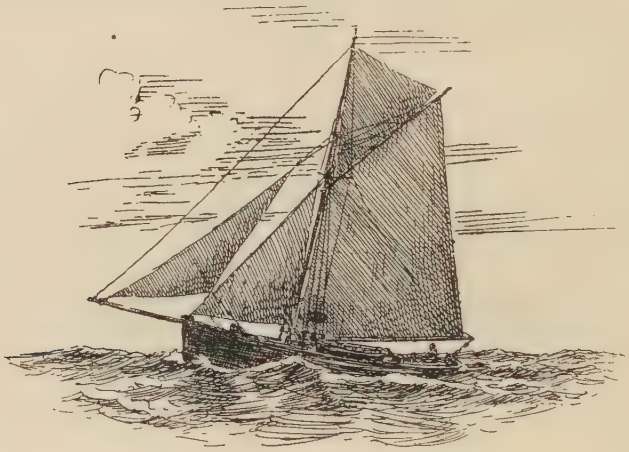
In general, they follow the same type: short overhanging bow, short counter, long keel, with deep heel, and powerful shoulders. They were all cutter rig, with mast very well back—in this respect again the Norwegian types at once come to mind, as well as the Brixham trawlers. Indeed in these, as in most successful small sea-going vessels, it was considered

PILOT CUTTER IN A BREEZE OF WIND

essential that all weights should be kept well aft. The ballast was all inside, and the result was a wonderfully easy vessel in the heavy and often threatening cross seas which prevail in the Bristol Channel and in the usual cruising ground between Scilly and south of Ireland, which is entirely open to the south-west, west, and north-west gales of the Atlantic.

The pilots, like the Brixham and Falmouth Quay puntmen, always adhered to the loose-footed mainsail, until they adopted roller reefing in the pilot boats,

which was done more from necessity than from choice to enable the pilot in charge to bring the boat home single-handed when necessary after putting pilots on board incoming ships. As they were mostly between 30 and 40 tons and 40 and 50 feet long, some contrivance for handling the mainsail on the long trip home was essential where one, or two men at most, was all the crew that was available. The roller reefing gear in these boats, however, was by no means



BRISTOL CHANNEL PILOT CUTTER

free from the general objection urged against this class of gear — namely, that it pulls the sail out of shape, and results in broken booms and roller pins.

They are extraordinarily slippery in light airs, and with their light sails set, have a way of astonishing their owners and yachts sailing in company with them, and they are fast and amazingly comfortable in motion in a hard blow and heavy sea. Among well-known boats of this type which have done long cruises

under their new owners are *Marguerite*, two *Cariads*, *Saladin*, *Baroque*, *Faith*, and others.[1]

Another fine type of west-country cutter-rigged vessel is the stone-barge used at Falmouth for shipping stone from the Porthoustock quarries. There is a similar type of craft at Plymouth, and they ply up and down the south-west coast and up the creeks and rivers of the Fal and Tamar to all the small ports

STONE-BARGE 'SIRDAR'

with a crew never exceeding two men. They may often be seen making a passage outside in the Channel with about 18 inches freeboard with a low and falling glass, while the skipper smokes placidly at the helm, and 'crew' is below cooking dinner.

[1] An excellent account of these craft has been written by Mr B. R. Waite, in the *Yachting Monthly*, vol. xlii., who admirably describes the easy motion of these boats.

As to our sister isle, although some saintly mariners appear to have gone to sea from Ireland at various times between the sixth and ninth centuries, it is curious that the mast and sail have never been greatly developed by the modern Irish, and without doing them an injustice it may be said that they have never been a seafaring race.

St. Perran performed a remarkable feat of seamanship when he navigated a millstone to Cornwall, but I believe he was not an Irishman, although at that

GROOMSPORT YAWL

time sailing from an Irish port; nor do the Irish appear to have wished to emulate the performance, which seems to have been regarded as rash even in a saint.

To come to more recent times, it is true that cutter-rigged craft appeared on a map of Ireland in the sixteenth century, but this fact does not throw any greater light on Irish seamanship of the period. The Galway hooker is probably the only eminent boat of a sea-keeping type now in existence which is indigenous to the Emerald Isle, and the native genius of the race

in regard to naval architecture of sailing-craft has been confined to some not very advanced lugsail boats of canoe type, such as the Groomsport yawl or Galway pookhaun. What large fishing-boats are owned or manned in Ireland have been mostly acquired from the Cornish, Manx, or Scots fishermen who frequent and fish in Irish waters.

OLD MERSEY WATERMAN'S RIG

CHAPTER VIII

FRANCE

"French-built, isn't she?"
"Yes, my lord. They are great ship-builders."
—*The Rover.*

From the flat sand-bound coasts of the Low Countries, where the bluff-bowed Dutch craft sail, we may turn westwards along the French shores.

Leaving the West Scheldt and the countries of the leeboard, the spritsail, and the long vane aloft, the carvel-built hulls and square-cut lugsails of Northern France are reached. They will be found to join on by degrees with the higher-peaked, shorter luff lugsails, which again will lead on eventually to their parent, the long-yarded lateen of the Mediterranean.

Off Blankenburg, in Flanders, the local fisherman still wears his leeboards, but here the standing lugsail is first seen set in the French style; the mainsail tall and square-headed, and the foresail set on a light mast right in the eyes of the boat. These local men set their foresail luff taut with a spar bowline, like that used in setting their lugs by the Malays, and formerly by the old Scotch 'Skaffies.'

But off Niewport, a little further west, the familiar French three-masted lugsail rig may be seen. Main and fore lugsails set on masts stepped amidships, and right forward, now become the ordinary working

TRAWLER OFF HAVRE

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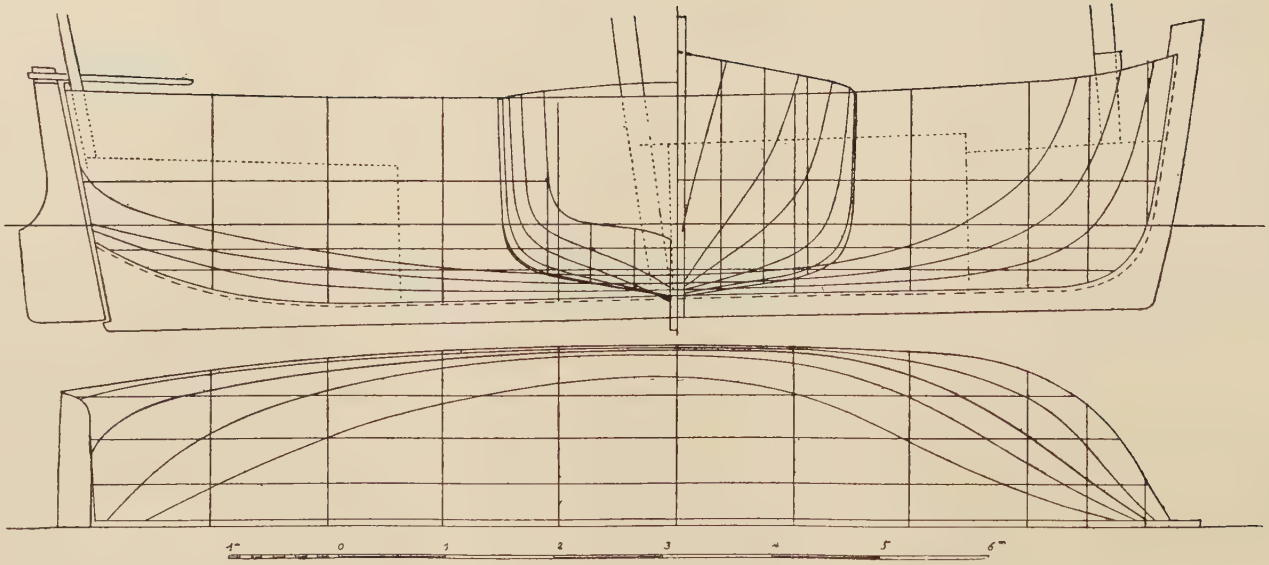

BELGIAN LUGGER (1895)

L.O.A., 10m. 53; beam, 3m. 30; draught, 0m. 97

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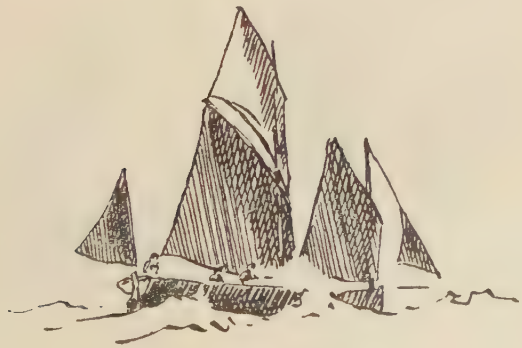
sails; a mizen, a running bowsprit and jib, generally of very equilateral cut, being commonly added, with

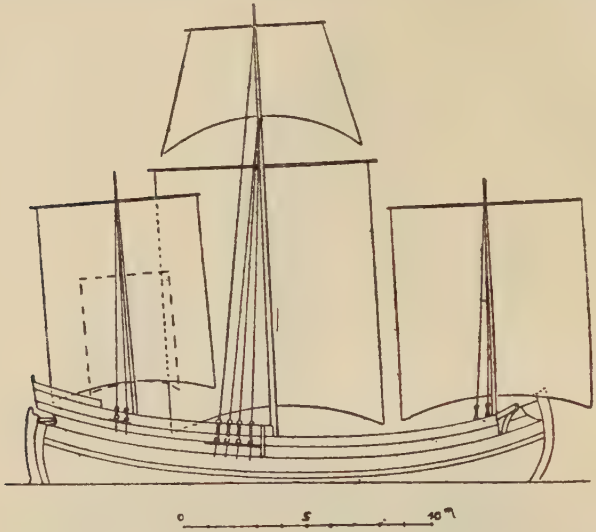
OFF BLANKENBURG



BELGIAN OFF NIEWPORT

a main topsail on the mainmast pole in moderate weather.

This rig, descended probably from the old three-

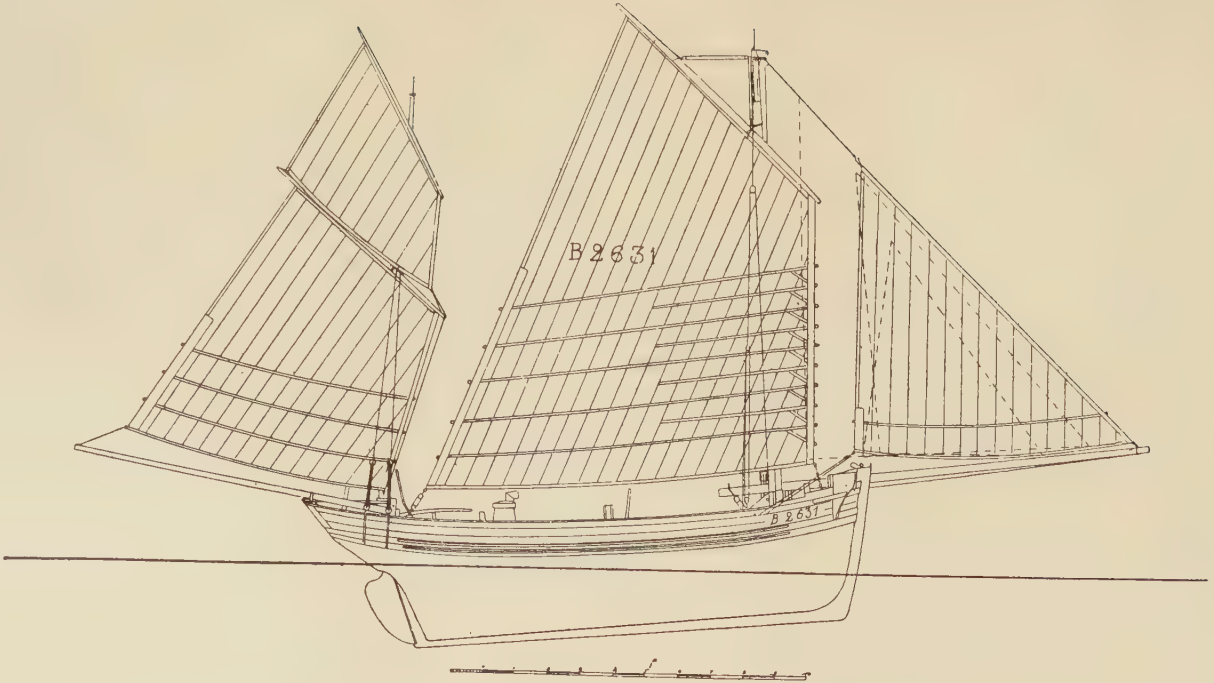


SAIL PLAN. OLD HERRING 'BUIS,' SEVENTEENTH CENTURY

masted felucca of the Mediterranean, adapted through the squaresail of the old Dutch herring *Buis* of the seven-

ETAPLES LUGGER IN A DECEMBER GALE

teenth century, was, as already mentioned, a favourite one with the French armed craft of the Napoleonic



SAIL PLAN OF THE ETAPLES LUGGER

Sail Area, 210 sq. metres

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wars, and was adopted and used until recent years on certain portions of our east and south coasts, at Yarmouth and Hastings, but it seems never to have taken strong hold of British seamen.

The rig has the advantage of being easily reduced to snug proportions, while it offers a fine spread of canvas in light winds, an especially useful feature in trawling.

For the drift-net fishery, a number of boats hailing from Calais, and the smaller ports along the coast

HAVRE TRAWLER—SMALL SAIL

westwards round Grisnez, utilise the English form of two-masted lug rig, with main and mizen lugsails and jib, similar to the modern drift-boats just across the Channel at Brighton or Hastings.

The French boats are, however, as a rule easily distinguishable from the English by reason of the square cut of the head of their lugsails and the equilateral form of the jib.

The English and Scotch fishermen, during the last half of the nineteenth century, found that the sharper

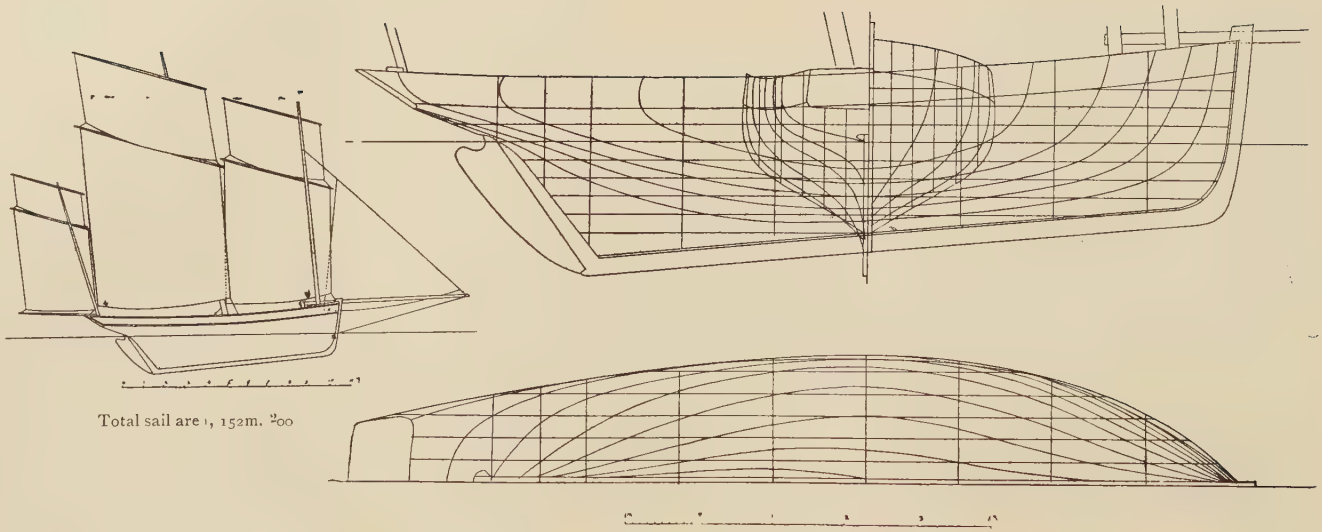
the peak the better the set of the lugsail on a wind, and there is no comparison between either the cut or the set of the average lugsail, north and south of the Channel.

In the same way, the English jib is longer in the luff and shorter in the foot, and is at all events to the accustomed eye a prettier-looking sail than the equal-sided triangle presented by the old-fashioned jib of

TRÉPORT TRAWLER

the French, both on the Atlantic and the Mediterranean seaboards. This shape appears to be largely a result of the low foremast-head and the length of bowsprit used with the lateen and the French-cut lugsails.

The Tréport trawler, the Normandy chasse-marée, and the fishing-fleets as far round as La Rochelle, show the French peculiarities very clearly. The foresail often has a bonnet on it for lightness in bad weather.



"BISQUINE" OF GRANVILLE AND CANCALE

L.O.A., 12m. 40 : beam, 3m. 58 ; draught, 1m. 85 ; displacement, 17 tons

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The unlacing of the bonnet reduces the sail and avoids the weight and danger caused by heavy rolls of reefs

NORMANDY CHASSE-MARÉE
(FROM A SKETCH BY SIR W. WARINGTON SMYTH)

ST. MALO 'BISQUINE,' WITH UPPER TOPSAILS

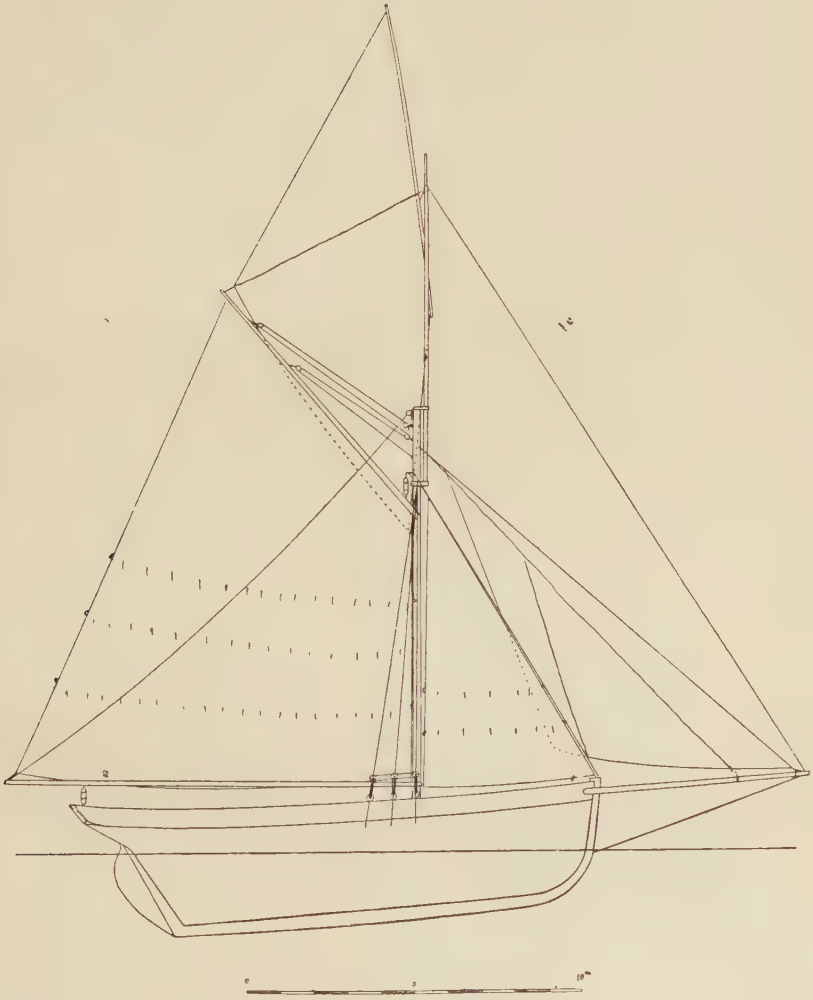
soaking in a heavy head sea, which in this rig would often be a serious matter owing to the forward posi-

tion of the foremast. The foremast occasionally, in the larger craft, has a long pole for a topsail in fine weather, especially for trawling purposes; and two or more jibs and standing bowsprit are carried in the bigger chasse-marées. The St. Malo boats are even seen in calm weather with light upper topsails set over the usual lug topsail.

TRAWLER OFF LA ROCHELLE

Some of the beautiful two-masted luggers which may be seen sailing out of Havre and other ports have adopted a higher peak and proportionately shorter luff with great advantage; and with their neat sharp sterns, boomed mainsails, and tall spars, they are not only fast and safe, but also a very handsome type of boat of which any seaboard might be proud.

This three-masted lug rig, with local variations (as



SAIL PLAN OF HAVRE PILOT BOAT

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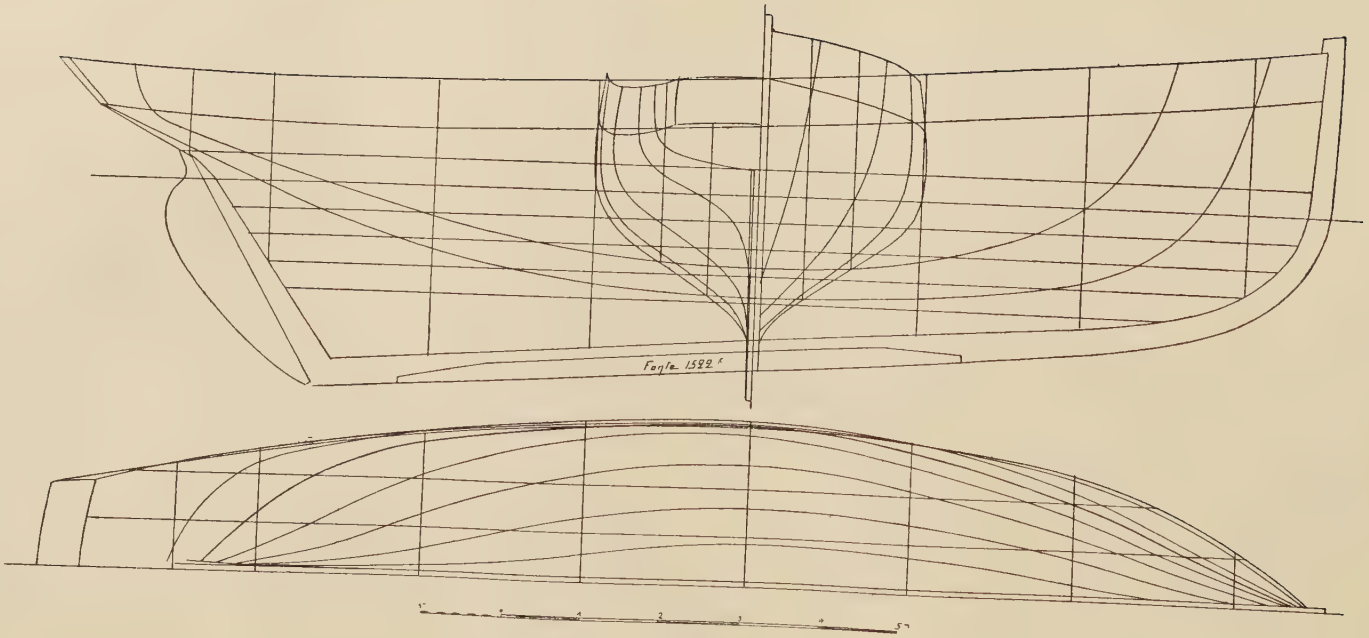


HAVRE PILOT BOAT

L.O.A., 16m. 10; L.W.L., 14m. 10; beam, 4m. 10: draught, 2m. 55

By kind permission of 'The Yachting Monthly'

for instance the omission of the mizen, the addition of a boom to the mainsail, or otherwise), may be said to be the national rig of France, and although now falling out of use in favour of the smack-rig in many places, can still be seen in all forms and sizes of craft

HAVRE TRAWLER

from men-of-war boats to traders of several hundred tons.

The gaffsail has made progress in certain parts, and the Channel ports have had some very fine cutter-rigged pilot boats, such as the Havre boat of which the lines are here given.

The coast of Britanny,[1] and especially that part of it which fronts the Atlantic Ocean, the charms of which have been sung by such well-known yachtsmen as Frank Cowper and Claud Worth, is one of the few places in the Western world where the traveller may still find a large number of vessels working under sail alone.

During the sardine season it is not uncommon to see as many as fifty sailing-craft fishing off Douarnenez Bay or Penmarch.

It is rather surprising that motor fishing-boats, or

SAINT-JEAN DE LUZ

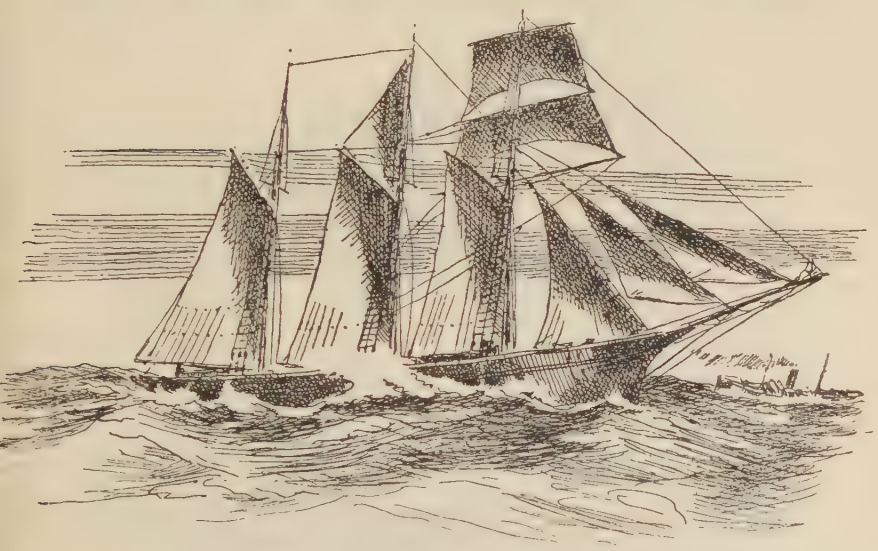
at any rate craft with auxiliary power, have not taken the place of the old luggers and smacks, for in the light winds that usually prevail during the sardine season an auxiliary engine would be of great help in view of the strength of the tides which makes sailing in these rock-strewn waters anxious work unless one has a commanding breeze.

But the Breton fisherman, partly perhaps owing to

[1] For many details and several sketches in this chapter I am indebted to my sons, Bevil and Nigel, who have cruised on the Biscay coasts successively in *Cariad*, *Africa*, and *Carn Dhu*.

his conservatism and partly owing to poverty, has remained true to sail.

In the spring of every year a number of vessels sail from north Breton ports such as St. Malo and Paimpol to the Grand Banks of Newfoundland for the cod-fishery. They are barquantine or schooner-rigged, and run to a considerable size. The four-



N.F. FISH SCHOONER

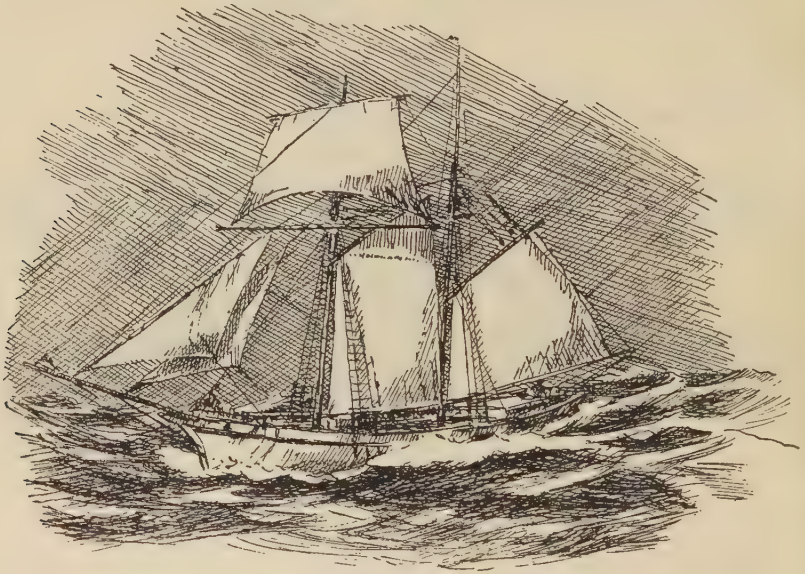
mast barquantine *Jean Sunois* is a fine example of these craft.

Large crews are carried, as the fishing is done from dories. In Icelandic waters, on the other hand, fishing is done by means of hand lines from the vessel's deck.

The Iceland fishermen are two-masted schooners with a single square-tops'l on the fore. Roller-reefing gear is fitted on this sail as well as on the main and foresails. They are fine powerful craft of about 200

tons, hailing principally from Paimpol, and carry a crew of eight or nine men. Their numbers have dwindled rapidly during recent years.

A similar type of vessel is used in the coastal trade, some of them in fact being old Iceland fishermen. There is also a considerable schooner trade in the Western Atlantic from Newfoundland to Spanish ports, carrying fish for the Latin countries, in which



FRENCH SINGLE-TOPSAIL SCHOONER

the French compete with the Danes and British. These craft, though snugly rigged and of small tonnage, do remarkable passages — 23 days on the eastern passage, and often less, and generally about 30 days on the western. They average from 100 to 200 tons only, and yet make remarkable weather of one of the worst passages in the world.

The crabbers of the small tidal harbour of Roscoff

call for no special comment, being similar in hull and rig to the smaller class of Camaret smack.

The open boats of L'Abervrach used for inshore fishing and crabbing are beamy, flat-floored craft about 20 feet in length, rigged with gaff and boom mains'l, fores'l, and jib. A tops'l is carried by many of the boats in light weather. Many hundreds of similar boats are used all along the north coast of Finistère, at Ushant, and at the small tidal fishing harbours in the Four Channel. The straight stem, raking stern-post, flat floor, and great beam are the main characteristics of the smaller type of fishing-boat throughout Brittany.

A great variety of sailing-craft may be met with in Brest harbour and the neighbourhood.

The Brest pilot-boats are pole-masted cutters about 40 feet over all, with a straight bow, counter stern, and a fine sheer. Their stern-posts are raked to an even greater degree than usual in Breton craft. They have the appearance of being both fast and handy. I believe that they are shortly to be replaced by larger vessels.

Unlike the boats further south, the majority of the luggers in the Rade de Brest carry a light running bowsprit and jib, which undoubtedly improves their sailing qualities. In ports like Douarnenez, Audierne, and Concarneau the bowsprit and jib are not popular, owing to the lack of space in the small crowded harbours.

One occasionally sees the Chateaulin luggers with their three sails of different colours: for instance, a sky-blue main lug, dark red fore lug, and light brown jib.

The crabbers hailing from the little port of Camaret,

which lies a few miles to the southward of Brest, are noted for their seaworthiness. They vary somewhat in size, the smaller boats being about 35 feet over all with the usual raking transom stern, while the larger ones run to over 50 feet in length and have counter sterns. They are very beamy vessels, with bold high bows and deep draught. The rig is a pole-masted cutter with the picturesque square-headed Breton

CHATEAULIN RIVER

tops'l, and roller reefing on the mains'l. The crew usually consists of five men.

In the summer months many of them sail over from Ushant and work near the Scillies and round the Land's End. I sketched this one from *Africa* a few days ago some 8 miles off the Manacles Buoy—not the smoothest spot for the sketch-book with wind at S.W.

The three chief fishing ports of the west coast of Brittany are Douarnenez, Audierne, and Concarneau.

The boats used in the sardine fishery are mainly luggers, but of recent years there appear to be an increasing number of smacks employed. In the old days the fishing was carried on from the lugger itself, but nowadays as a rule each vessel tows a large heavily-built open boat from which the nets are

CAMARET CRABBER

worked. The nets themselves are made of very fine material, and are dyed a light blue. The season lasts from May to the end of August.

The luggers are very alike in their main characteristics—namely, flat floor with a hard turn to the bilge, great beam, and a very pronounced rake to the stern-post, not unlike the Scots 'Zulu.' They are

roughly built and rigged, but the men keep their boats and gear in good condition.

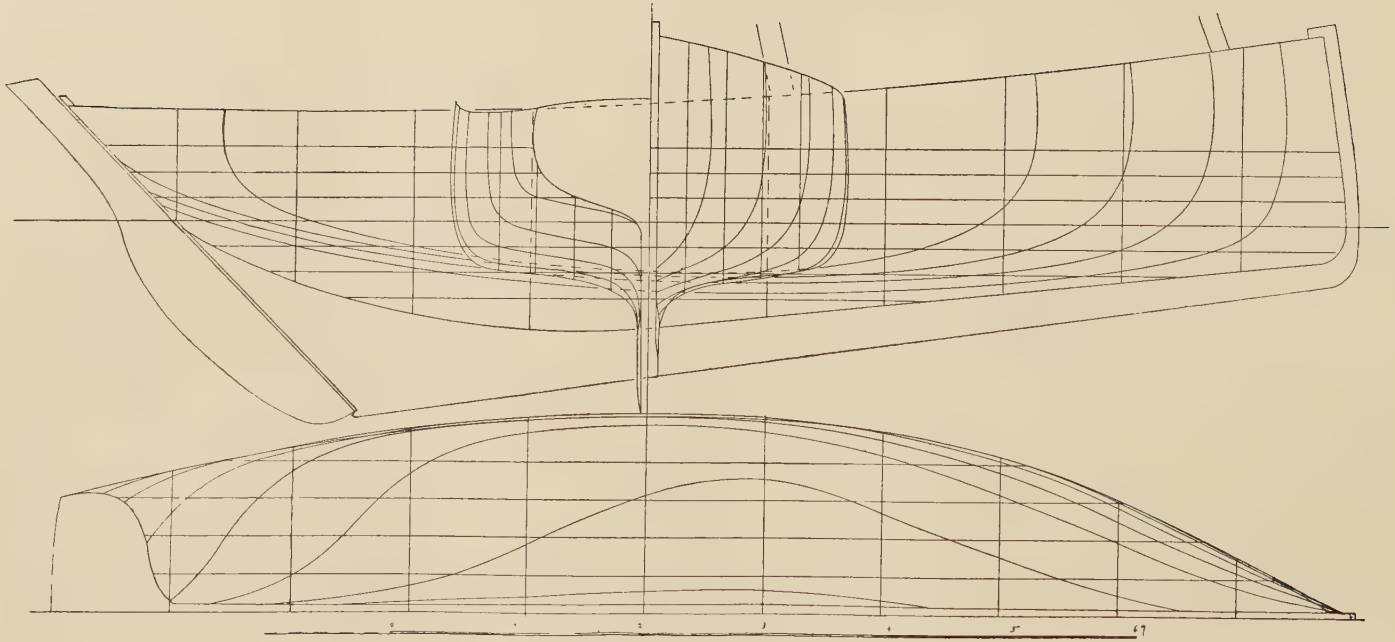
The foremast is stepped right in the eyes of the

SARDINE LUGGER

boat and the mainmast nearly amidships, generally with considerable rake aft. The sails are very lofty and well peaked. A big sail spread is essential in the

OFF DOUARNENEZ

light winds that usually prevail during the sardine season. In all the newer boats the tendency is to increase the sail area.



BRETON SARDINE BOAT

Built in 1900. L.O.A., 10.25 metres: L.W.L., 9.5 metres; Displacement, 7.5 tons

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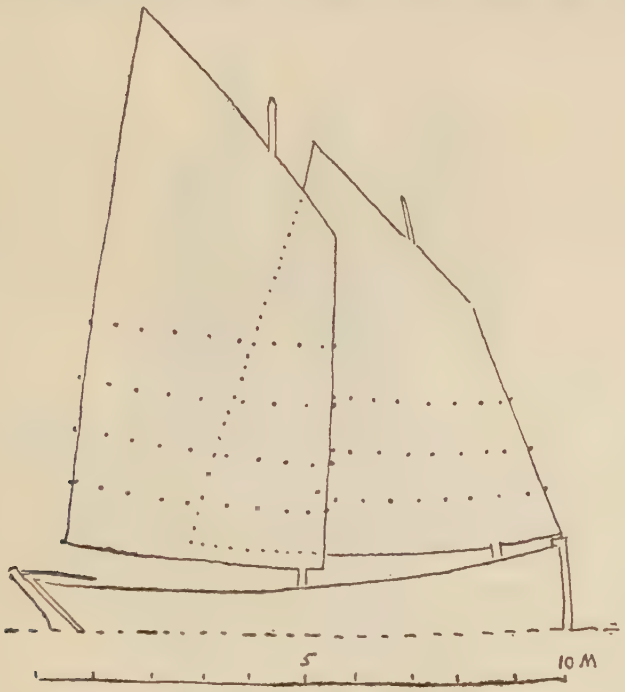
To avoid straining the luff rope when peaking the sail, a rope is made fast to the heel of the yard, led through thimbles seized to the luff of the sail and set up on deck. The hulls of the boats are tarred and the sails of a rich dark-brown colour. There are exceptions, of course. Some luggers at La Trinite



BRETON SARDINE BOAT—SAIL PLAN

have grey topsides, and one may often see sky-blue or yellowish-brown sails. The registered number of the boat with the first letter of the port of registry is painted in white on both bows. The name is painted on the quarter, as nearly all the boats have sharp sterns.

The cutter-rigged sardine boats and crabbers have

their topsides, as a rule, painted in some light colour: white, light grey, or blue, with sometimes black bulwarks. Their sails are usually dark brown, with the exception of the light sails, such as tops'l and big jib, which are generally sky blue.

It is the variety of colours of hulls and sails that constitutes one of the chief characteristics and charms

DOUARNENEZ LUGGER

of the Breton fishing-craft. And the fishermen are as gaily attired as their boats: terra-cotta or sky-blue jumpers and trousers, black jerseys and berets, and enormous wooden clogs form their usual dress.

Most of the cutter-rigged vessels are square-sterned. The larger ones have counters of somewhat broad and heavy type. A few may be seen with sharp sterns,

but these probably are boats which have been converted from the lug rig.

Other distinctive features of these craft are the high sheer with great freeboard for'ard—in comparison with which the sterns sometimes seem rather low (as in so many fishing-craft, mainly for ease in working lines or nets)—and long bowsprits, which do not carry

YAWL-RIGGED CRABBER—RAZ DE SEINE

out the line of the sheer but are more or less parallel to the waterline.

Roller-reefing on the mains'l is practically universal. The usual square-headed tops'l is carried. Topmasts are never used.

There can be few harbours in the world that can compare with Concarneau in beauty of form and colour when the fishermen are in, landing their catch. The luggers lie packed in rows alongside the quay—a veritable forest of masts—with the sky-blue nets

drying in the wind and basket after basket of silvery fish being carried ashore.

Beyond them are the big tunny yawls at anchor, some aground, propped up on legs with their sterns in the air. And beyond that again is the inner harbour surmounted by the battlemented walls of the old town, the stronghold of the sixteenth-century sea-rovers. At the harbour entrance new arrivals come running in, their lofty brown sails bellying to the westerly breeze and a bone in their teeth as they sweep past the pierhead.

The vessels used for the Tunny fishery are in many ways the most remarkable of the various kinds of craft to be met with on the west coast of Brittany. I believe that they did not come into existence as a type until the beginning of this century.

Although from time to time various odd craft have been used in this fishery, such as pilot-boats and even yachts, nevertheless a very definite type has been evolved, and the modern boats are almost identical in build and rig.

The older vessels were about 50 to 60 feet O.A. with three beams to the waterline length, drawing some 4 feet of water forward and 7 to 8 feet aft. They had a rather hard turn to the bilge, and carried stone ballast. The more modern boats are longer, with about $3\frac{1}{3}$ beams to the waterline length. There is more rise of floor, and they are ballasted with iron embedded in cement. As would be expected they are both faster and more comfortable sea-boats than the old model.

They have high freeboard with enormous sheer for'ard, and their broad flat counter sterns seem rather low by contrast. One would think that this feature

might prove dangerous when running in heavy weather, and I believe that several boats have, in fact, been lost through being pooped when carrying on before a heavy sea in an endeavour to land their catch in good condition. In this connection it may be mentioned that the fish are kept in racks on deck and not stowed below, as they tend to go bad quickly.

These vessels are almost invariably yawl rigged, with a boomless gaff-headed mizen sheeted to a long

TUNNY FISHERMAN

outrigger. A mizen tops'l and enormous balloon jib are used in light weather.

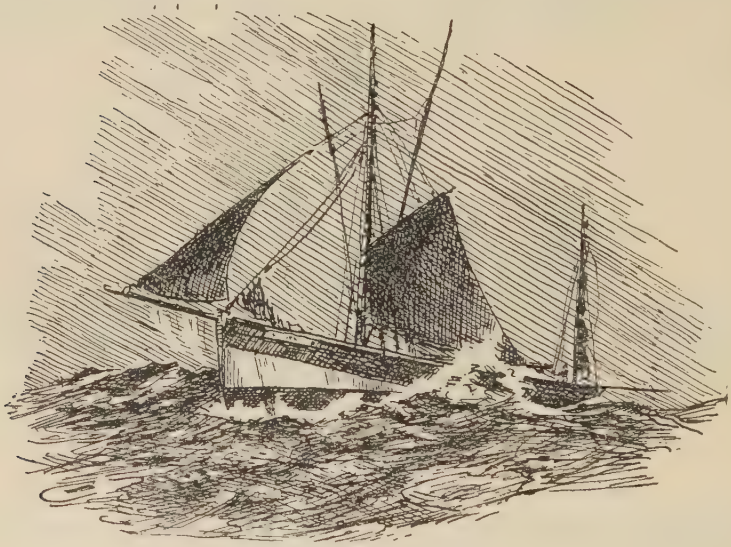
Unlike the majority of the Breton fishing vessels—which have roller-reefing—the Tunny boats have loose-footed mains'ls.

The most striking feature of these craft are the long fishing-rods, which are hinged one on either side at the mainmast near the deck. They carry eight or more lines aside, and when fishing are lowered to an angle of about 45°. In harbour they are triced up to the masthead, and project several feet above the truck.

The topsides are painted in a variety of ways: white, grey, and occasionally black. But the most common is light grey or sky blue—and sometimes salmon pink—with black or dark-grey bulwarks.

The working canvas is usually tanned, of a great variety of shades. The light sails are as a rule sky blue or white.

When lying moored in a crowded harbour the bow-



TUNNYMAN OFF FINISTERRE

sprit and mizen outrigger are topped up out of the way, in a similar manner to the bowsprit of a Thames sea-going barge.

Off the wind the big balloon jib is frequently set as a spinnaker, the fishing-rod being lowered a little to act as the boom. This jib is a very big sail. It hoists two blocks to the masthead, and when the vessel is on a wind the clew comes nearly as far aft as the main shrouds.

The crew of a tunnyman consists of eight or nine men. The boats work as a rule a long way off-shore. One may meet them 200 miles or more to the westward between Fastnet and the Longships, and I have seen them as far south as Cape Finisterre.

The Morbihan luggers are much the same as regards size and type of hull as the Concarneau boats, but they are rigged with very curious, tall, narrow, square-headed lugs'ls, almost rectangular in shape, the peak of the yard being sometimes lower than the heel: at a distance indeed their sails are in outline strangely

MORBIHAN LUGGER

like those of some of the two-masted Amoy fishing junks. These boats are credited with remarkable speed and weatherliness.

In the men who handle these vessels France has again that reserve store of industrious, uncorrupted, and fearless men which, in her case especially, owing to the diseased nature of much of her civilisation as represented in her fickle capital, constitutes a treasure of immeasurable value to the nation.

If Paris, as has been said, is a standing peril to France, it is her country-folk, and above all her

seaboard-men who, by their virtues, have her safety and her greatness in their keeping.

Long may France be able to turn to the intrepid and great-hearted men of Brittany and Normandy in the day of struggle and adversity. It is such men that make the true inward stuff of any nation, and to such that France owes that marvellous recuperative power which is the admiration of all, and the astonishment of those who do not know their France.

GUERNSEY PILOT, SNUGGED DOWN

And may their noble fleets and lovely harbours long be spared the petrol-paraffin poison which is slowly asphyxiating so many of their neighbours!

The Channel Islands fishing and pilot boats formerly had their three masts all rigged with the standing lugsail, French fashion. They, however, pretty generally adopted a boomless gaffsail with considerable peak and good cut, set on the same mast-plan, in place of the lugsail proper.

Some of these boats are very fine powerful craft, and much they need to be good sea-boats in the wild seas and strong tides about the islands. In light weather the big sail-spread obtained by the three-masted rig is no less necessary to give them way across, or against, the strong currents which make sailing anything but unalloyed pleasure in these dangerous rock-strewn waters.[1]

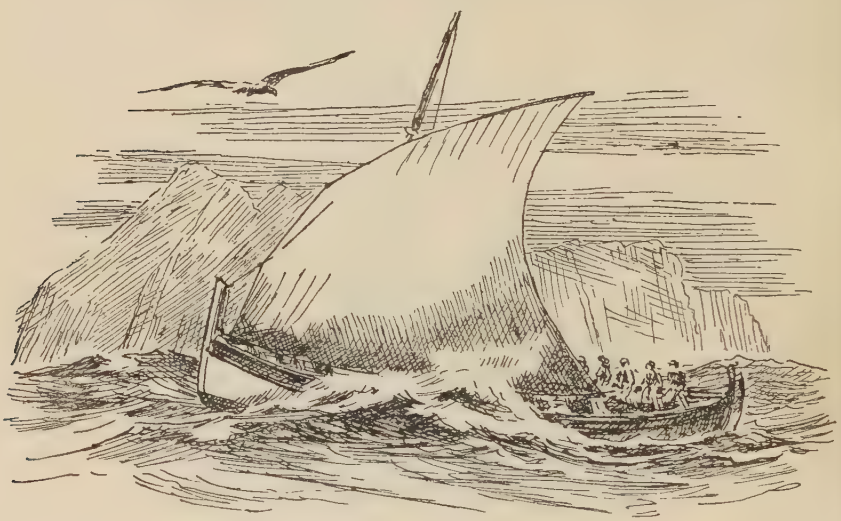
CHANNEL ISLANDER.

Far out in the Atlantic and having but rare communication with the Biscay or Spanish or Portuguese ports, lie the islands of Madeira belonging to Portugal, and the picturesque and lonely Canaries, long owned and inhabited by the Spaniards. The population of Madeira, which lives largely on fishing, uses the 'barquette' type of hull, and the long-yard short-luff lugsail. Their boats, with white underbody

[1] Approximate dimensions: 36 ft. by 12 ft. by 8 ft.

and gaily coloured upper strakes and their peaked white sails, are very picturesque, and suit their sunny clime. All are built with deep bilge keels for facility of handling on the steep pebble beaches, which form the only refuge from the heavy gales which occasionally sweep across the island, and vex the Atlantic into tremendous seas.

In the Canaries, on the other hand, although the



MADEIRA FISHERMAN IN NORTH-EAST TRADE

great Atlantic roll penetrates right into every cove, there are a few small harbours which give protection to a very fine class of deep-water fore-and-aft schooner which still carries on nearly all the traffic of the islands. These are lovely little craft rigged very much on the American model. They carry a crowd of kites aloft in the light winds which often prevail under the lee of these great islands. An island 6000 feet high such as Gomera forms a very considerable

obstruction to the trade wind, and when it comes to the great dominating peak of Teneriffe, the crown and glory of the islands,[1] it blocks the trade entirely in places, and alternately lets squalls and strong winds round its flanks which require quick work in shortening sail, and which kick up no end of a sea. The Canaries, with their big ocean swell setting on shore, their frequent calms and quick changes, are

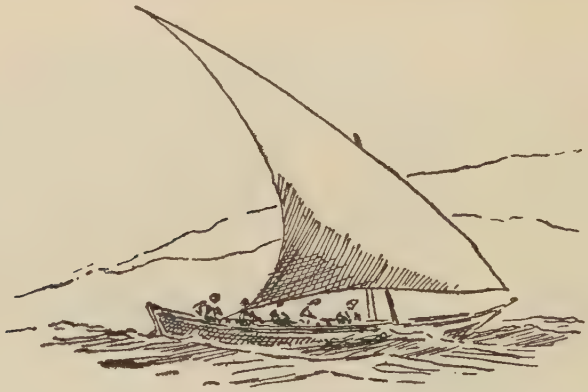
CANARY ISLAND SCHOONER

essentially one of those localities where the motor auxiliary should be a great boon to the sailing vessel, adding materially to her safety and to the quickness of her passages from island to island.

Leaving the Biscay ports of the coast of France, at the southern end of which the long yard lugsails and

[1] This glorious peak, which outrivals even Vesuvius and Fusiyama, can often be seen 60 to 80 miles away. I have seen it above the trade-wind cloud, at sunrise on a winter morning, 120 miles distant.

canoe shapes begin to creep in, the voyager comes to the bold northern Spanish coastline, with its grand mountain backgrounds towering to the skies, its narrow fjord-like valleys, and its strong and sudden winds. Here the Spanish boatmen give a veritable touch of the south, with their casual seamanship, picturesque headgear, and almost lateen-rigged boats. A grand coast for the cruiser further west and round the much-sought lights of Ortegal and Finisterre; a



VIGO FISHERMAN

coast of deep inlets and mountain promontories, of great rains and prolonged westerly gales; the home and nursery of the young north-east trades, of knock-down squalls in the morning watch, of hot suns, of calms and cross seas, and such contrasts and attractions as a high coast and a deep and open ocean have to offer. Southwards, past the Portuguese coast, to Cadiz many types of lateen and square-rigged craft are seen, all distinctly Mediterranean in type; an historic coastline famed in the history of the English

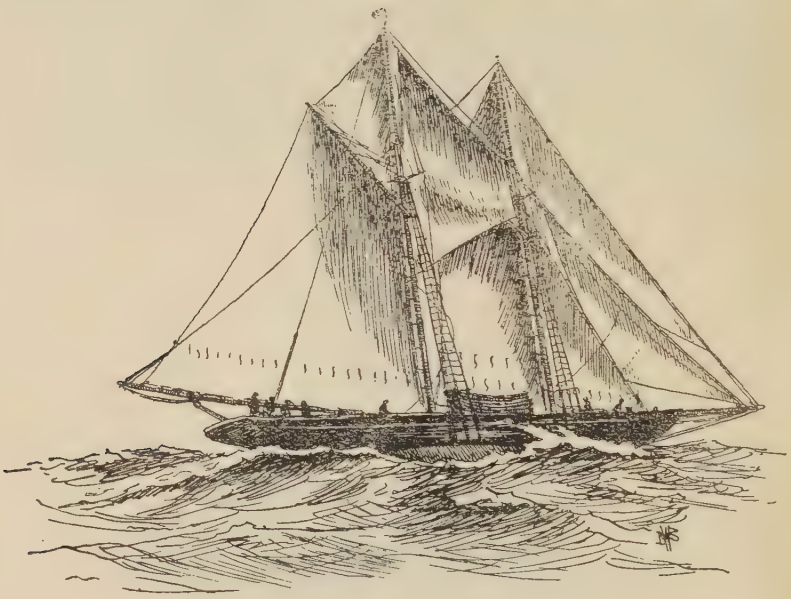
fleets, it has bred fine types of seamen and great explorers in the past.

In comparing the larger types of fishermen mentioned in previous chapters with the splendid Bank schooners hailing from Gloucester and other U.S.A. and Nova Scotian ports, the difference in the conditions of service must not be forgotten. The North American craft are designed for hand-lining and

SEINE BOAT, AROSA

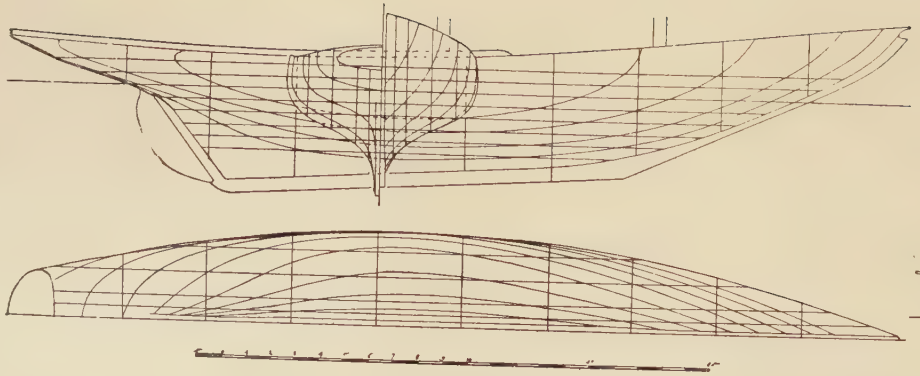
comparatively small carrying capacity, and owing to the distance to the fishing grounds great speed is essential. Speed has therefore become the first consideration. In all the European types fishing with drift and trawl nets, the first essential has always been power to keep the sea, with their nets in work in all weathers, and therefore to protect their crews and to carry heavy cargoes in safety. It is asserted that the Grand Bank fishermen do not have even in winter to face such destructive weather as do the European fishing vessels. The general result has

been in North America to develop a tall sparred vessel with cut-away bow of yacht-like design, while in North Europe all fishing craft, even the steam trawler

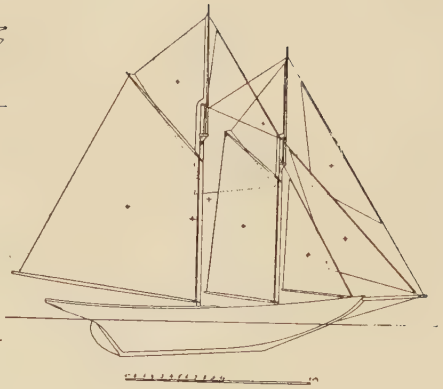


BANKS FISHING SCHOONER

and drifter, have retained the deep fore-foot and the snug spars, which have enabled them to lie to the sea in safety in any weather.



MODERN BANKS FISHING SCHOONER, 1905



SAIL PLAN

To face p. 274

TARTANE—GULF OF GENOA

To face p. 275

CHAPTER IX

THE MEDITERRANEAN

PROBABLY no sea in the world leaves such an indelible mark upon the mind of the navigator as does

SPANISH AND ARAB GALLEY (SEVENTEENTH AND EIGHTEENTH CENTURIES)

the Mediterranean. The long Pacific roll, the winter grey of the Atlantic, the hot rain of the Indian Ocean, or the fury of the China Sea, are written on the worn paint of the hulls that battle them, and on the hearts of the men who brave them. But the Mediterranean

in its deep summer blue, or in the low lights of winter, in oily sunlit calm or the haze of the chill mistral, has a way of its own, a fascination, a fickleness, and a beauty which are irresistibly attractive. The sense of colour, the charm of contrast are nowhere so potent. The constant presence of bold outlines, of peaceful natural harbours, of all that is bright and striking in tint and form, and the need for constant vigilance which the neighbourhood of bold landfalls in a treacherous sea demands, combine

OFF PANTELLARIA (AFTER ADMIRAL W. H. SMYTH, 1823)

alike to exercise to the full the powers of observation, and to impress the mind of the sailor. Other seas of the world mark deep the heart of man, but the Mediterranean appeals to all his senses, and writes most upon his memory.

Behind its physical aspect lies always the wonder of its historic past. The dim vista of man's struggle from empire to empire unfolds itself along these much-navigated shores. Pictures of one knows not what quaint sea-craft, in which the old mariners

piloted from point to point, arise in the mind's eye. Again, the many-banked galleys of Tyre, or of Athens, the high-sided corn-ships of Rome and Carthage, or the gaily-coloured merchantmen of Genoa and Venice, seem to sail out of the mirage

TUSCAN FISHING-BOAT (FROM A SKETCH BY W. ROBINS)

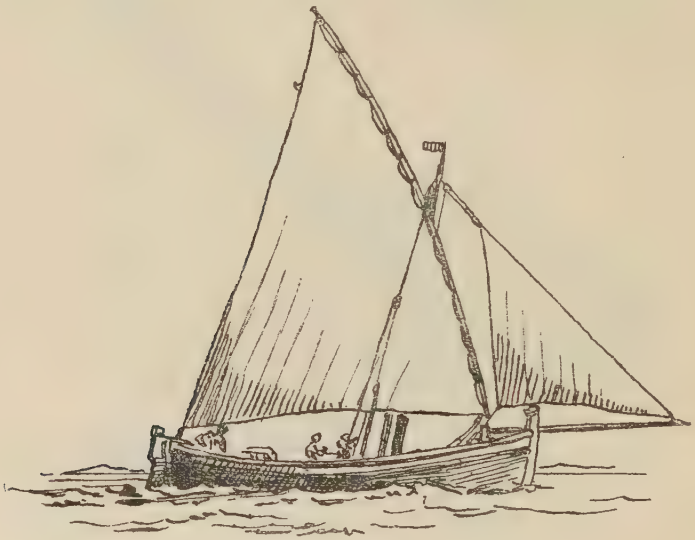
in the hull of some humble tunny boat with the rising sun astern of it.

And surely of all its wonders the most wonderful, and a striking tribute to the little distant Isle of Britain and its people, is the fact to be writ in future histories, that for over a century this sea of memories, which has seen peoples and empires rise, rule, and

wane, should have been an 'English lake,' won, patrolled, and kept by the English fleets.

It is noteworthy that positively nothing of the ancient Egyptian, or even of the classical Roman, seamanship or methods of rig or construction appear to survive in the Mediterranean, or even in Egypt itself.

More especially since the oar-propelled galley has



GULF OF GENOA

become extinct, it is left to the Far Eastern seaman alone to revive memories of the seamanship of the ancients by a conservative retention of a few very ancient devices known to the older civilisations. These, doubtless before they were swept away, the ancient Mediterranean seamen communicated to, if they did not actually derive many of them from, the peoples whom they met across the Indian Ocean.

We know that the Egyptians equipped fleets for

the East in the reign of Rameses III. or about 1200 B.C., and that the Phœnicians circumnavigated Africa at the beginning of the sixth century before Christ, under orders from the Pharaoh Nekan. These voyages probably account for the similarity of many devices found in our records of ancient Egypt to those which are still in vogue with the conservative Eastern seamen.

Our records of the development of seamanship and shipbuilding in the Middle Ages are meagre, but the oar, which was so greatly relied upon by the Greeks and Romans, remained in the Mediterranean the principal form of propulsion. In that sea of frequent calms and squally winds such a mechanical form of propulsion was of the utmost value where speed was required, and except in the larger merchantmen, the sail was only an auxiliary even to recent periods, when the mast and sail had long been fully developed by the nations of North and Western Europe.

At what period exactly the squaresail of the Egyptian and classical seamen began to give way to the lateen, now almost universal for small craft in the Mediterranean, is not clear, but it seems to have directly followed the Mohammedan incursions.

That the lateen was generally adopted in square-rigged ships during the fifteenth century for the mizen sail or driver, on account probably of its superior set for holding the wind in staying, we find from many drawings of that period, and it became definitely the rig of the Venetian galleys of the sixteenth and seventeenth centuries, in place of the classical squaresail which had been retained until that period, and of which we have records in

the galleys as late as the fourteenth century, disposed as in the time of Pliny, on fore, main, and mizen masts.

The squaresail was still in use in the Venetian galley of the fourteenth century, but the galleass

BRAGAGNA (AFTER E. W. COOKE, R.A.)

class which fought at Lepanto in 1571 had three masts, all of which were rigged with lateen-sails.

From some old drawings of men-of-war of the sixteenth century,[1] it would appear likely that the lateen driver or spanker in North Europe was developed as a result of the tip forward given to the

[1] *e.g.* one of a British man-of-war, 1588, given in Holmes's *Ancient and Modern Ships*, from the tapestries of the old House of Lords.

lower squaresail yards in cases where the line of the deck from the high poop to the waist was pitched very steep. The sail became practically a lugsail in this position, and when the fashionable angle of pitch of the deck became much flatter, the advantage of the better set of the sail in this position was retained by cutting off the lower fore triangle.

The *Henry Grace à Dieu* [1] had lateen topsails on

TARTANE—MESSINA

her two aftermasts, and also a lateen topgallant sail.

Whatever the immediate cause of the use of the lateen in the ships of Northern Europe in the fifteenth century, which later on developed into our present fore-and-aft gaff and boom sail, it seems probable that the Mohammedans already possessed it, probably in the shape of the present dhow-sail, at a much earlier date.

Wherever the sailors of Arabia penetrated either

[1] Launched in 1514.

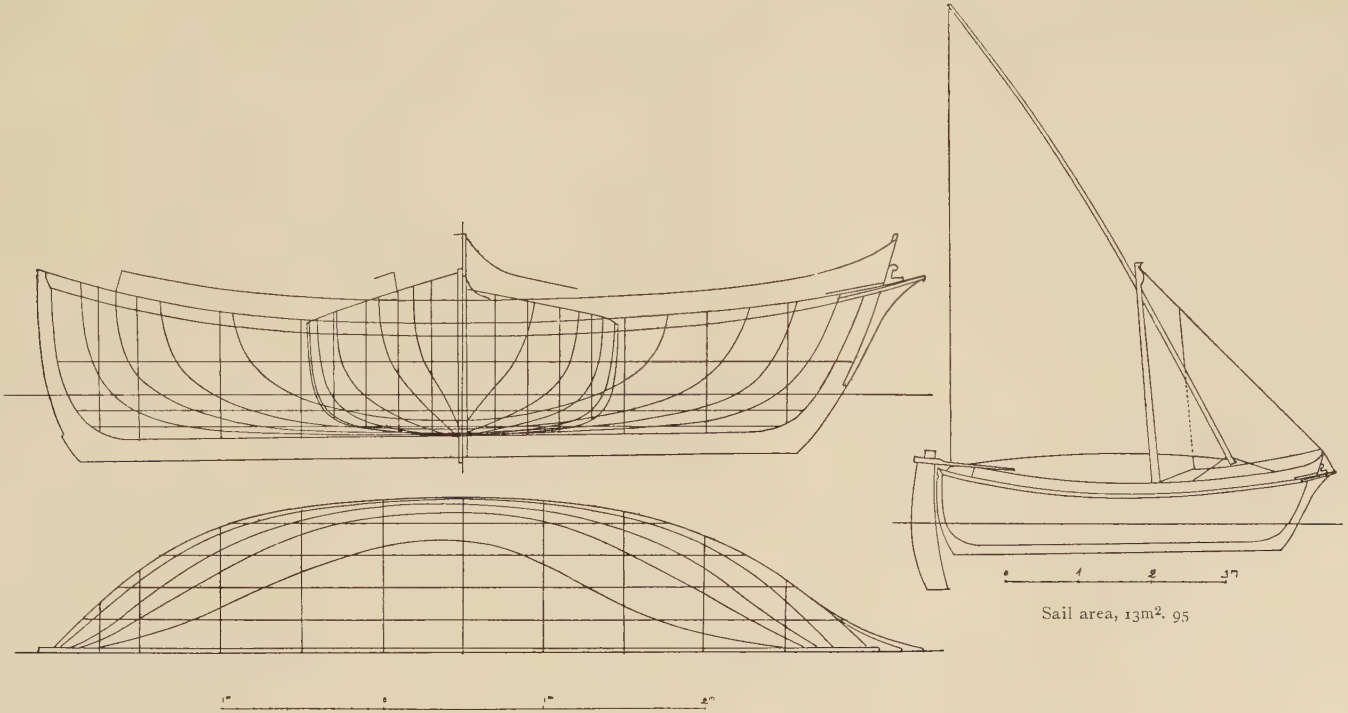
east or west, in the Indian Ocean or the Mediterranean, the lateen followed them and remained. Wherever, on the other hand, the Mussulman wave did not break, or the Arab seaman failed to secure a footing, as was the case in several parts of the Indian Ocean, there apparently remained unaltered many of the oldest devices known to shipmen, and consequently, in looking for survivals of Egyptian or classical practices, we have to turn eastward to

LIPARI ISLANDER (ADMIRAL W. H. SMYTH, 1823)

inland waters of India, to Burma, to Siam, or even China.

Down to the seventeenth and eighteenth centuries the old galley under various forms remained the most characteristic of Mediterranean craft.

The term is the old γαλαία or γαλέα which was applied to the single-decked rowing-vessels which succeeded the earlier many-banked ships of the Greeks and Romans, and which were introduced as a result of the success of the famous Liburnian galleys which won the battle of Actium.



LINES OF MARSEILLES FISHING BOAT

By kind permission of 'The Yachting Monthly'

To face p. 283

Even to the early nineteenth century these vessels were common, and the name of galley[1] was still applied to single-decked vessels used for pulling or sailing.[2] They were used with the felucca rig, and were a favourite class wherever men enough could be obtained to man the oars.

As would be expected in a sea of such sea-memories, the Mediterranean offers at the present time an unending variety in the craft which sail its waters. In interest, in beauty, and in serviceableness they are second to none in the world, and if ever exhaustively dealt with they would furnish material for a lifetime's work for a Cook, a Dixon, a Wyllie, or a Charles Pears.

The Western Basin

Every visitor to the Riviera knows the little 'barquette,' the high-stemmed shoreboat with the round sharp stern and the long-yarded lugsail or lateen which, with minor variations, is used from Alicante to Alexandria; and many will have noticed the sleek sides of these boats, which are carvel-built, as sailors say, in contradistinction to the strong, light clinker-build of the north.

Along the Spanish and Riviera coasts these beautiful little boats have particularly well-built sterns, with great breadth carried well aft at the gunwale, giving them buoyancy and carrying-power. The Portuguese coaster and the fishing craft of Madeira are nothing more than the Riviera 'barquette'

[1] This is almost the only classical boat-name which survives, with the exception of γαῦλος, a form of Phœnician trader from which possibly our Norse term yawl is derived.

[2] Admiral Smyth's *Sailor's Word-Book*.

enlarged from 18 or 20 feet, to 30 or more feet over all.

The profile of the hull is generally peculiarly like that of the blade of certain figure-skates, the stern and stem posts having a 'tumble-home' at the gunwale, and curving gently into the keel, which is itself considerably rockered. The shape is eminently suited to boats which are often beached in a heavy

PORTUGUESE COASTER

surf. The 'barquette' is in every respect a lovely craft, very speedy and easily driven, staunch and stiff. The fore-deck is usually carried along in waterways to well amidships, where it drains off through two or three little scuppers through the rail, and tends to keep the boat dry when heeling. Even when fitted with motors, as many are to-day, they by no means lose their individuality and charm. In

fact they constitute a lesson in good looks and speed with small power which most motor-boat designers might study with advantage.

The sail *par excellence* of the Mediterranean is the lateen. As noted above, this form of lugsail (for such it is generically) is of Moorish origin, or to be more accurate, it is the adopted sail of the Mohammedan, for as to its true origin there is no evidence at present. Its wide spread from the Ægean to the Atlantic is evidence of the influence which

THE UBIQUITOUS BARQUETTE

Mohammedanism has exercised upon modern navigation in these waters.

The inland penetration of the lateen sail to Lake Leman is as surprising as it is picturesque. The great stone-carrying boats of the lake are well known to the many diplomats and others, even the most unseeing, who visit Geneva in a constant stream in these days of International Bureaus and Commissions which the League of Nations has brought into the ordinary life of Europe. The pair of long yards and high-peaked sails so familiar in every view of the

bluest lake in Europe are a constant pleasure to the eye, creeping gently in the distance through the calm, or sailing with the weight of a mountain wind and churning the water into white before the sharp fore-foot; the wonderful curves and the soft shadows of their great wings taking new shapes with every breath of wind.

The usual rig of the coasting trader or Tartane,

TARTANE, THE LEGHORN AND RIVIERA COASTER

familiar in all the charming natural harbours along the Spanish, French, and Western Italian coasts, is the one-mast lateen with bowsprit and jib.

A light topmast is often carried, upon which is set a jib-headed topsail, sheeting to the lateen-yard about a quarter of its length in from the peak. The bowsprit is also often a long high-pointing spar, upon which one or more outer jibs may be set beyond

the usual big equilateral staysail or jib now in general use with the lateen.

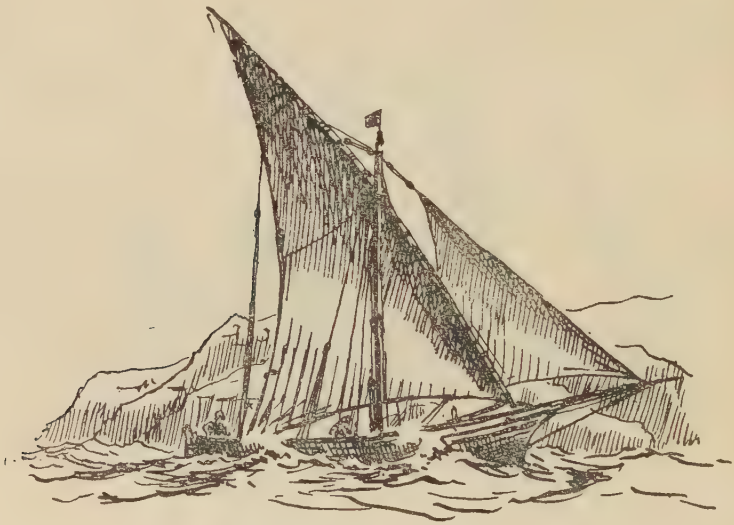
The handling of the big lateen mainsail is a science by itself, and may be recommended as an experience likely to bring life to any jaded soul seeking for sensation.

The yard, which is in two or more parts according to size, spliced or ' fished ' together, is hoisted gener-

LAKE LEMAN

ally on the port side by a halyard which passes in two parts through a pair of masthead sheaves. A four-fold block and a stout rectangular sheave built into or secured at the deck, just abaft the mast and standing some feet above the deck, form the tackle for hoisting and lowering the sail. A running parrel holds the yard into the mast. There is generally a peak halyard to assist in taking a portion of the

weight of the yard, and in peaking it to the required angle; but the set of sail is really controlled by the heavy tack-purchase at the heel of the yard and by the main-sheet. In running free a wonderful lifting-power is given to the lateen by taking the sheet forward and letting the tack-purchase run out; the yard then lies across the ship, the triangle being upon its apex, the peak dropping and the tack rising until

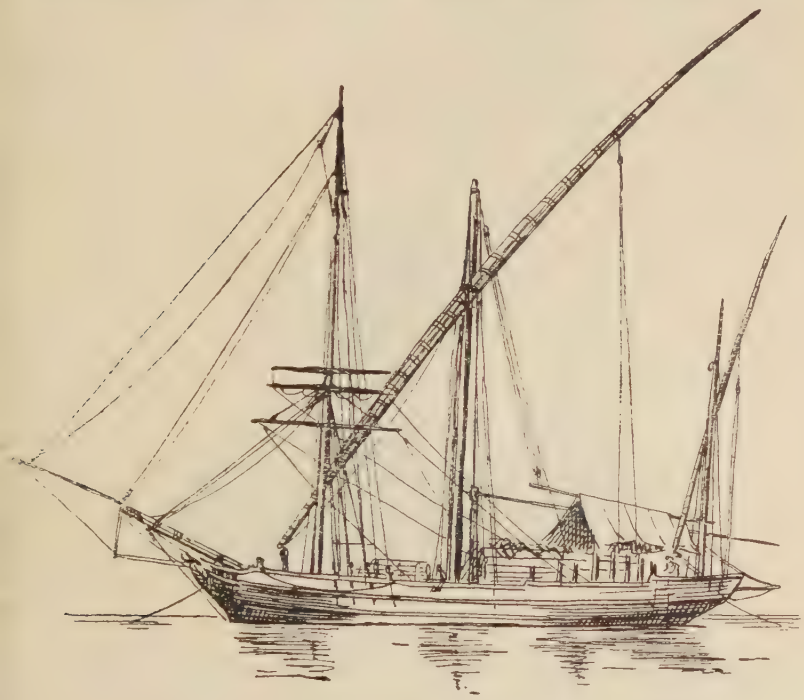


GIGLIO TRAWLER, BEATING

the strain on the sheet is about equalised. Where a jib-headed topsail is set above the lateen-yard this cannot, of course, be done to the same extent as in the smaller fishing-craft which have but little gear aloft.

When close-hauled the heel of the yard sags out to windward in a way which is at first somewhat embarrassing to the fore-and-aft sailor. Its right position is found, however, when the sheet is in to

the required extent, and the strain along the foot of the sail asserts itself. The tack tackles are used to prevent the yard from swinging, which it does with considerable violence in a seaway when the peak is being subjected to a series of wild oscillations; one tackle is brought aft and the other forward, or they

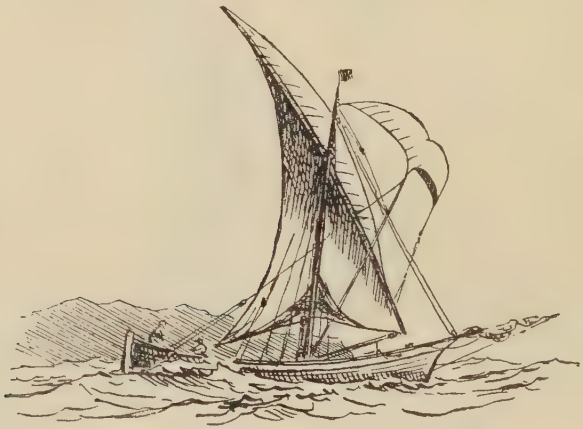


OLD GENOESE VINCO, 1845

are spread athwartship as may be necessary as a result of the position of the yard or the direction of its movement.

The sail is as a rule taken in by being furled to the yard, two or more brails being used in the first instance to spill the wind, the canvas being then furled and tied by a hand upon the yard. The difficulty of the

process naturally varies with the size of the vessel, but even in a moderate sea, furling a fifty-footer's lateen sail is no fun if you have had no practice at it and are not possessed of prehensile toes. The *Tartane*, with her lifting clipper bow and her round quarters and sharp stern, is a lovely sea-boat, and has a dignity and beauty of her own, enhanced by the lovely proportions of mast and yard and her graceful seat upon the water. In a very marked manner she conveys, especially when at sea, the im-



TRAWLER, OFF ELBA

pression of a kind of sea-perfection which is hard to analyse, but which appeals to the eye and heart of the seaman.

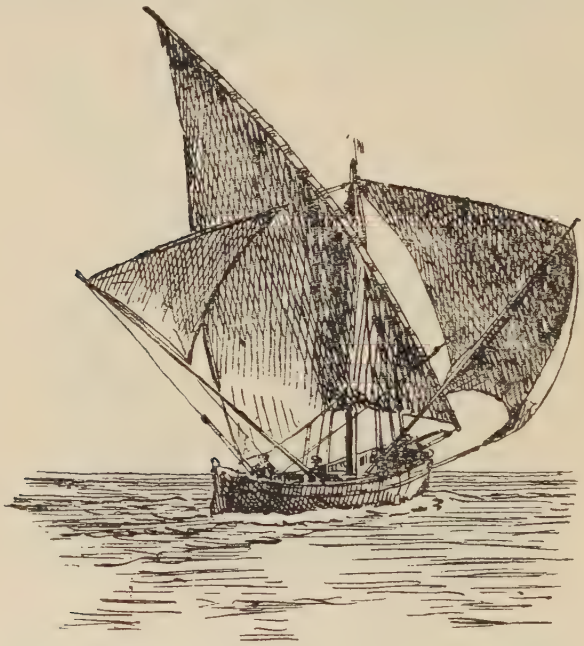
The virtue of the lateen, which at first sight seems so ill-suited a sail to such squally coasts as those of the Mediterranean, is that it can always be let go with a run in a heavy blow; and my grandfather, who did many of his first surveys of that sea in a lateen-rigged *paranzello*, used to speak with emphasis of the handiness of the lateen in this respect. At

the same time, the yard is long and inconvenient on deck, and it is better generally to keep it off the deck if possible. In many of the Italian coasters regular chocks or a crutch are fitted to receive the long-yard when lowered in bad weather, and a small storm-sail ready bent upon its yard is carried on the opposite side to the big sail all ready to be hoisted when the other is secured in its place.

PARANZELLO, OFF PALERMO
(FROM A DRAWING BY ADMIRAL W. H. SMYTH, 1823)

The tricks which the skilled lateen-sailor plays with his sail are endless, and can be best seen among the trawlers off the Tuscan coast, where, to suit the varying strength of the wind, upper and lower spinnakers are set at one moment, and the next the big mainsail is being skilfully emptied of half its wind. When the trawls are hauled the yards are allowed to swing out forward and are brought on deck. No little experience is necessary to keep the sister

boats working together on a trawl-net at exactly similar speeds as the changing puffs of wind come up astern, and there is no rest with the sheets or with the small auxiliary sails which are constantly being eased or tautened, hoisted, 'spilled,' or taken in. Only the trinchetto sails of the Tagus *muleta* exceed



NAPLES TRAWLER

the Tuscan fisherman's in number and variety. But these boats are most beautiful when bending close-hauled to a stiff breeze on the beat home, when their weatherly qualities will delight any sailor.

My father, who at one time used one of the smaller Tuscan fishing-boats for a cruise of some months' duration, used to speak with pride of the power of his little craft to carry sail in strong winds; but he was

unfortunate in his crew, which consisted of two men who, whenever it blew hard, first of all besought him to run for a port, and when he refused used to get out their rosaries and go upon their knees in the lee-scuppers, where they remained praying and crying until driven out of their retreat by an opportune green sea. But these were longshoremen, very different from the generality of Italian fishermen, who are

SQUARE TOPSAIL LATEENER, 1841

probably the finest mast and sail men of the Mediterranean at the present day, and whose one-masted luggers from the Adriatic coast may be seen as far east as the shores of Egypt.

From the records of the Mediterranean during the beginning of the last century, when, for the first time since the Crusades, it began again to be a sea known to British sailors, it is evident that the old three-masted settee or felucca rig, the rig *par excellence* of

that sea, was then far commoner in comparison to others than is now the case.

The reason is not far to seek. At that time the old methods of warfare were still in vogue, and the three-masted lateen rig was well adapted to long vessels of easy lines and low freeboard of the galley type, which could be propelled at considerable speeds in calm weather by a large crew of rowers. For warlike purposes they were used by the old Venetian and

MOLETA SAILS (TAGUS, 1861)
(AFTER PROF. STORY-MASKELYNE)

Genoese sailors of earlier centuries, by the Moors on the Barbary coast, and by the Greeks during the war of 1819, as well as by all the great sea-fighting nations for their small craft during the Napoleonic wars.

For large cargo carriers and for warfare, steam has taken the place of the old long sweeps, and the sail remains for the small coaster and the fisherman where economy in crew is necessary, and seagoing and carrying capacity are required as far as they can be made compatible with restricted size.

For large-sized coasters, therefore, the ordinary fore-and-aft or topsail schooner and the ketch rigs

SPANISH FELUCCA

GREEK FELUCCA PRIVATEER (FROM AN OLD PRINT, 1819)

are often seen on the coasts of Italy. In the Adriatic especially, the two-masted lugger is a very frequent friend.

As late as the forties and fifties examples of fair-sized three-master lateens were still common—in the beautiful *bragagna* of Dalmatia (a true felucca, or rather settee, in build and rig), in the brigantine shown off Torre di Rio, and in the peculiarly rigged *velocera*, which are both from sketches by my father.

The last-named is a development of what used on the Barbary coast to be known as a *xebec*, which was

OLD BRIGANTINE (TORRE DI RIO, 1841)
(FROM A SKETCH BY SIR W. WARINGTON SMYTH)

a *felucca* with square yards on the foremast. It was a rig which gradually came into favour for larger vessels, the main and mizen masts retaining the lateen yards.

Not a few old drawings show that the square top-sail was very frequently set during the last century over the lateen, as was done over the gaff mainsail of our old smacks. This was not only the case in the felucca-rigged vessels on fore and main masts, but also in smaller *paranzellos* and others.

But as in northern countries the fore-and-aft jib-headed topsail has replaced the upper squaresail, so it has happened in the Mediterranean, and the jib-header is seen even over the lateen yard.

The three-masted, or settee rig, without topmast, is still retained in parts of the Mediterranean: one may instance the big coal-carrying *gaiassas* of lower Egypt, and some of the fruit-carrying and other

OLD VELOCERA (ELBA, 1841)
(AFTER SIR W. WARINGTON SMYTH)

long narrow-built boats in the neighbourhood of Naples.

The mizen is undoubtedly less common at the present day with the lateen-sail than it was during the first half of the last century. At Genoa, Leghorn, or Naples, the rig depicted in the Genoese *bovo*, and that of the *paranzello*, are seldom seen, the one-mast rig being the commoner. In some cases a fore-and-aft mizen instead of a lateen may also be met with. It is not easy to account for the lack of popularity of the mizen, as the lateen mizen is easily handled in

a wide-sterned boat, and would be very serviceable in hard weather.

For sharp-sterned boats, however, such as the majority of the present small traders of the western basin and the Adriatic are, the mizen has its inconvenience if carried, as must be the case with the lateen mainsail, right aft on the taffrail. Accordingly in many craft, outrigged wings and cross-piece were built over the stern-post forming a primitive kind of

NEAPOLITAN FRUIT-BOAT

counter, either left open or decked in, as in the Bovo on page 303. The pilot boats of the Spanish coast at Alicante and elsewhere have always been partial to this rig.

It will be noticed that the lateen-sail of the Western Mediterranean differs considerably in shape from that of the Indian Ocean and Red Sea. It is only in the smallest boats that the forward angle is cut off so as to make a piece of square-cut luff. The Arab lateen

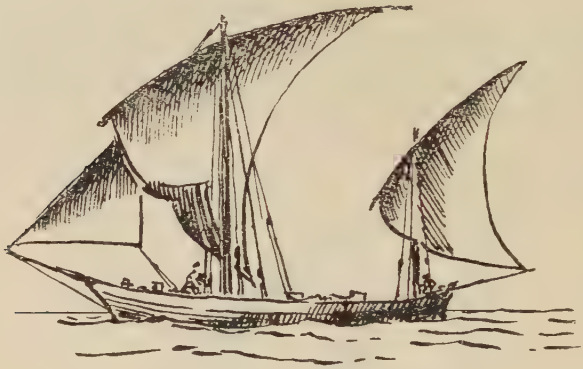
is almost invariably so cut, and the sail is in truth a four-sided one. Its disadvantage when so cut is apparent on a wind, when a straight luff is more difficult to maintain, and the heel of the yard is inclined to take charge in a seaway because less controlled than it is by the Mediterranean tack tackles, or by the tack-boom of many of the Tartanes. It

FLYING TOPSAIL, SPANISH FELUCCA

appears to be tradition that the old settees, small single-decked vessels of the felucca rig but without topmast, generally carried sails of the quadrilateral Arab pattern.

But the sail of the big latcener of the western basin is usually more nearly an equilateral triangle than that of the dhow, and it is more sober in the amount

of peak given to it. The lateen, which is more exuberant in its peak, is of course that of the inland *gaiassa* of lower Egypt.



SAILS 'SCANDALISED'

The western lateen always remains on one side of the mast, and is never shifted for a fresh tack. Its

ITALIAN BALANCELLE OR NAVICELLO

shape enables it to stand inside the rigging of the mast, and not outside at the extreme masthead as is

necessary in the case of the Arab *gaiassa*, as a result of the cut of the sail and its high peak. The western lateen is thus far more snug to the mast, and more easily lowered on deck, and is certainly a more seaman-like and weatherly sail, while it is always made of stout material cut and roped after the European style.

A peculiar form of fore-and-aft mainsail, reminding one of the ' curtain ' spritsail of Smyrna and Turkey,

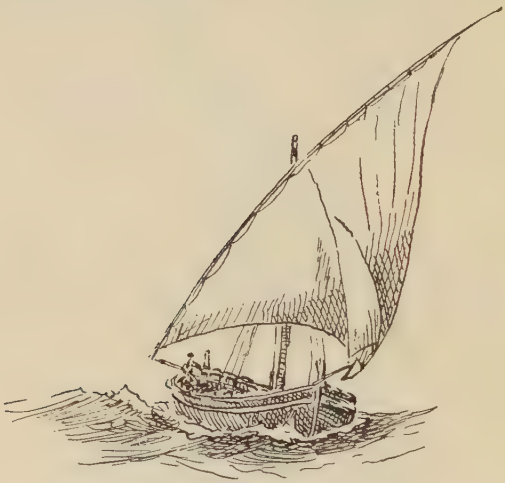
STAYSAIL SCHOONER, U.S.A.

is that on the mainmast of the *velocera* on page 297. This is still frequently met with in a number of Italian coasters in the Gulf of Genoa and the Tyrrhenian Sea, known as Navicello or Balancelle.

The gaff is kept standing, and is a very long spar hung from one-third to one-half of the mast's length below the heel of the topmast; the mainsail is hauled out along it, when set, and travels on rings to the peak halyard slings. The peak is controlled

by vangs going to each quarter, and no boom is used.

In conjunction with this low-cut mainsail is a huge jib-headed topsail which hoists on mast-rings up the topmast, but is also laced along the portion of the lowermast which intervenes between the gaff and the heel of the topmast. When this topsail is taken in, the mainsail left standing is about equivalent to an



OFF MAZZARA (ADMIRAL W. H. SMYTH, 1823)

ordinary sail with three reefs down, and is certainly snug enough for most purposes.

With this sail the mast is always given considerable rake aft, and while the lowermast is long, the top and the topmast are both rather short. The whole has rather a topple-over-stern air which does not impress the stranger with a sense of beauty as does the lateen.

Though seldom met with in three-masters at the present day, this mainmast is seen in the Navicello of

the Gulf of Genoa, used in conjunction with the very old style of foremast, placed right in the eyes of the ship and raking over the bows, upon which the old galleys and feluccas used to set the fore lateen.

In these vessels while the position of the mast, the old *trinchetto*, has been retained, the heavy lateen yard has been taken off, and a large main staysail,

BOVO (GENOA)

set from the maintop to high up on the foremast with its luff travelling on mast rings, is substituted.

The first record which I have been able to find of the use of this peculiar form of staysail is in a sketch made by my father in 1841, in the neighbourhood of Elba. In this case it is shown fitted to an ordinary felucca-rigged boat, the staysail taking the place of

the fore lateen, it having been possibly introduced as a storm-sail, when the fore yard was lowered on deck in order to reduce weight of top hamper.

The bowsprit, taking the place of the old overhanging bow, to which the tack of the lateen worked, remains in the modern rig in order to carry a jib necessary to give the required head-sail in ordinary weather.

THREE-MAST LATEEN (NAPLES)

The staysail is of the four-sided type in common use for the upper main staysail in square-rigged craft, and in the modern staysail schooner yachts, and is fitted on the foremast with mast-rings. It is a handy sail with good lifting power, easily set and stowed; its centre of effort is low, and it involves no weight of spars aloft. But it is not remarkable for beauty, nor for flatness of set when close-hauled, the upper fore angle being difficult to fill effectively on that point of sailing. It is said, however, to have great lifting power. In fine weather a regular main

topmast staysail is set flying to the foremast head above the main staysail.

Lying in harbour, these vessels at first appear to have a set of very solid jib-booms all 'on end,' like Thames barges in dock, but a closer inspection shows that what appears to be a jib-boom is in reality the old-fashioned foremast of history still surviving. The mainsail is easily and quickly furled by hauling in along the gaff, and, with topsail and main staysail furled aloft on the masts, there is clear room on deck for working cargo.

The peculiar rig of the Navicello is largely an outcome of the meteorological conditions prevailing in the Gulf of Lyons and Tyrrhenian Seas, which alternate between calm *bonaccia* weather, occasional *raggiature* or land squalls, and the fierce, cold *mistral* from the north; or again the *labeschades*, south-westerly gales of great violence, which blow home with a big sea of short range and very destructive power. In the light weather the big topsail and main-topmast staysail are most efficient sails for catching light airs, while in a strong blow with these upper sails furled, the centre of effort of the lower sails is low, and the vessel is under snug canvas easily controlled.

It will probably come as a surprise to many that, just as the leg-of-mutton sail, known to us to-day as the Bermuda rig and now adopted in the latest racing craft, was in use among the Dutch, has been a common rig in the Eastern Mediterranean, and has been long used (how long no one knows) among the Malays, so the staysail schooner, the latest development of the schooner rig among American yachtsmen, has its prototype in the Navicello of the Gulf of Genoa, and

has been in use there probably from very early days. Truly there is nothing new under the sun! Even the modern hollow spar is but a development of the light and miraculously tough bamboo yard used in the East for a thousand years. The seaman will notice, moreover, that the Navicello has her mainmast in the exact position of the modern fast schooner—namely, well forward of the midship section, and it has almost as much height in proportion as the 'Mudian, but is infinitely more easily reefed down in a hard wind by simply taking the topsail off her.

The Adriatic

The Adriatic provides a new rig to the sailor, for here is the powerful and flat-setting boomed Italian lugsail, which is seen alike in the *trabacola* or coasting trader, and in the gorgeous-sailed *bragozzi*, which is familiar to all lovers of Venice and its colouring.

The weather in this sea is notoriously unstable, and the harbourless condition of the greater part of the Italian coast has rendered it absolutely necessary to use a powerful rig capable of working out to windward off a lee shore. Both with the *siffante* or south-wester, and with the *bora*, the heavy, westerly blast which has dismasted so many good ships, sudden shifts of wind take place, followed by squalls of such violence and fierceness that a snug sail-plan and a powerful build of hull are alike essential.

The burst of a *siffante* on this coast is a thing not to be forgotten. It is a hot morning, and the sun flashes off the windows of the distant city, which bears a little south of west. A long swell comes up from southward, where a bank of threatening cloud lies, the upper edges lit up like the summits of great

snow-peaks. We lie up close-hauled on the port tack to a light air from south-west. The aneroid has fallen the part of a tenth since our morning dish of maccaroni, which, by reason of the swell and the hot sun, was perhaps not greatly appreciated. It is consequently with much impatience that we feel the roll, and long for wind, and eye the threatening horizon. A dull film of cirrus brings a haze over the sky above us, and the whole world seems silently to threaten

TRABACOLA

us with some terrific peril. It is not long before the wind suddenly comes among a few spasmodic white caps on the sea, sighs through our rigging, and is gone again. Our now close-reefed lugsail bangs about over our heads, and strains every rope and strand aloft. Then it comes, first a puff abeam, then one nearly right ahead, then steadying and stiffening minute by minute. Night seems to settle down and cover us up. The great strong bow breasts through

the short breaking seas, but the force of the wind presses her down until all our lee side is awash, and the mast is at such an angle that the foot of the sail is becalmed by our weather gunwale. We are making terrific speed, but taking in water everywhere. In the midst of this, and when we are beginning devoutly to wish we had a less heavy boom and roll of reefs to our sail, the mole of the harbour appears soused in heavy sprays under our lee. Gently and cautiously

ANCONA FISHING-BOAT

the sheet is slacked away by the strong-handed crew. The few minutes' run is desperately exciting, because we are sailing by the lee, and a gybe is imminent. A steep, fierce sea, showing its angry white teeth, seems to spring down upon the starboard quarter, the main-sheet suddenly falls in folds into the water, and with a bang like that of a gun the sail sweeps across above our heads. The sheet and tack part simultaneously, and the sail lies in a bag, pinned by the gale in the

rigging. However, it is a few moments more into the lee of the mole, where with a short sweep we round into the wind's eye. For a few minutes the sail has charge aloft, but as everything is slacked up, it is got in without having broken any arms or legs, as it seemed determined to do. Before night the sun is shining along the low, cloudy sky, and the wind

AT ANCONA

is hard, but moderating. To tell the truth, we felt mighty glad we were so near the land, for, while it lasted, there was a fierceness in it, a driving, hitting power which seemed uncanny, and which left us feeling surprised, bruised, and mystified, especially those of us who were new to Eastern seas. The paralysing power of a strong wind, which grips and holds down

the limbs, and overpowers the brain, and the stinging, vicious onslaught of the hard, salt spray ceaselessly slapping the eyes and face, if continued for many hours, are able to conquer the stoutest will, and are the direct cause of many a sea tragedy. It is at such a time that one feels their pitiless strength, and realises why so often shipwrecked crews are unable to do anything to save themselves.

The typical Italian lugsail seen in the Adriatic, and from thence carried to the far corners of the Medi-

ITALIAN FISHING-LUGGER (PORT SAID)

terranean by its enterprising seamen, is what we term a balance-lug—a Chinese lug without the battens, laced to boom as well as yard, and when hoisted ' set up ' by the tack purchase.

To prevent a ' back sail ' against the mast, and to ensure flatness of set, the Adriatic or Italian sail has its tack purchase brought to the deck at some distance away from the mast and abreast of it.

The *bragozzi*, stern on, and the *topo*, or mouse, of Venice show this peculiarity. If the sail is hoisted on

the starboard side of the mast, the tack purchase comes to a point about midway between the line of the

SHIP'S-BOAT, WITH ITALIAN LUGS

mast and the starboard gunwale. I am not aware that this method of setting down the tack of the lug-sail is adopted anywhere else.

ITALIAN COASTER

Of the Adriatic sailing-craft, the best known, because the most seaworthy, and the one which

carries the largest proportion of the coast trade, is the two-masted lugsail *trabacola*.

The high bow, the round stern, and the deep rudder hung on the stern-post outside the vessel, are characteristics of this as of most of the purely Mediterranean types of craft.

The mainsail is set on a mast stepped well inboard, and although generally smaller in actual area than the foresail, it has the power of a mainsail rather than of a mizen. It is of standing-lug cut, and the

ADRIATIC LUGGER

luff is generally set taut by bowlines. This sail is generally beautifully cut and set, and a new one is always a pleasure to look at.

The fore-lug is more of the character of a balance-lug proper, for it has a considerable length of boom and area of sail forward of the mast. The tack-rope is often so slackened up as to allow a large portion of the sail to swing out forward, giving the sail an odd appearance, suggesting that it requires setting up; but on certain angles of wind it is considered to draw

better when thus set. The pilot-boats of Alexandria are rigged in this fashion, and it is an excellent rig for open or ships' boats which require short spars and modest sail-spread. But they would be the better in general for a light bowsprit and jib on most points of sailing.

The bowsprit of the *trabacola,* like so many of those in the Mediterranean, is topped up at a high

IN THE LAGOON

angle, and carries one or more jibs, generally cut with the long low foot characteristic of the Latin sail-makers.

These boats are of beautiful lines and great power, and constitute one of the finest forms of sea-going luggers in the world.

Another form of lugger very similar to this occurs in the big two-masted traders of the Spanish coast, which appears to be an outcome of the same ideas, and

like the two-masted lateen *felucca*, also in use there, it shows evident connection with the general mast and sail plan adopted by the French and other Latins.

They both carry the somewhat long-yarded but square-headed lugsail which the southern races often substitute for the lateen. Both show the same tendency to obtain the balance of sail by placing the fore-

BRAGOZZI

mast right forward, and setting a lugsail upon it, sometimes a little larger even than the mainsail, thus avoiding the need of the stay foresail so generally adopted by the northern races, who place the forward mast well back from the stem-head. The bowsprit and jib are modern adjuncts both with the Norse and the Latin races, and only came into general use during

the nineteenth century. The jib has proved itself so useful a sail that it is now almost universal with lateen and lug-rigged vessels alike.

The Venetian boats are remarkable for the very slight draught forward, and consequently they carry the centre of effort of their sail area very far aft.

SAIL PATTERNS, VENICE

Many of the small fishing-craft, like the *topo*, may be seen sailing with what looks like a large mizen only stepped well inboard. At first one feels a keen desire to present their owners with a foremast and headsail after the usual proportions. But further consideration soon shows that the sail is correctly placed relatively

to the centre of lateral resistance, which is much further aft than in most boats.

The insignificance of the foremast and foresail of the *bragozzi*, and the importance of the large, gaily-coloured mainsail, are due to this cause.

The *trabacola* and other deep-water craft have necessarily far more underwater body forward, and

BRAGOZZI

thus can carry a sail-plan more suited to sea-going purposes. But the light craft of the Lagoon of Venice are of the flat-bottomed, mud-larking type, capable of navigating shoal waters with a minimum of draught and a maximum of carrying power. Wherever their owner can wade they must carry him and his wares or his fish. Deep channels are far between. And they

are quick to turn with the stroke of a long oar, light to move by an air of wind or by a pair of arms, steady to carry heavy weight of goods, and not to flinch at a squall of wind, and at the short ripple which soon gets up in the wide Lagoon waters.

What beautiful memories that little *topo* under sail brings back! The wide grey waters under a grey sky, rimmed by low grey islands and tall grey towers;

TOPO OF VENICE

or the sparkling blue of a sunny day, with the far city, so long unchallenged mistress of the sea-world, in all its colouring, and the snow-white, distant range, on the far sky-line; the lapping of the tide along the piles, and the cheery voice of my friend Antonio instructing me in short cuts across the flats, the character of his friends, or stories of the days of the old Republic's greatness.

The big single-mast lugger of Ancona and the south is in build a smaller *trabacola* fitted with one mast in place of two. Her big mainsail is of the same pattern as that of her big sister, and her bowsprit stands up at the same truculent angle. Capable, wandering sea-boats, they are to be seen heading up

TOPO (MOUSE)

to a *gregale* off Malta, or away down east running with dry decks before the long roll of a Levanter.

The Eastern Basin

The Italian form of lugsail takes us among the modern Greek fishermen, who use it in many of their sponge-boats and other fishing-craft, and in their small traders of the Archipelago.

But the Greeks, although they built and fitted out quite a fleet of felucca-rigged privateers in the early wars of the nineteenth century, are not really sailors

at heart. Our own seamen in times past had a very poor opinion of the seamanship of the *pukka* Greek, and a naval officer who spent three years of one commission in and about the Aegean, declared that he could never get any information out of a Greek pilot except long lists of omens foreboding bad weather, or of ports to run to when the wind should freshen up.

It must in justice be admitted that navigation under sail in small craft has its drawbacks in a sea

GREEK LUGGER

where the wind, even in weather of an apparently settled character, is liable to such sudden shifts as is here the case. The sheltered anchorage of one hour is a dead lee-shore the next; the greater the apparent protection when the anchor is dropped close in, the more imminent the danger when the wind is blowing a sudden gale right on the rocks. A southerly wind and fine weather may suddenly shift to due north with a heavy squall and confused sea,

while six miles to the eastward a distant sail is seen with a fresh easterly wind.[1] Such incidents,

BRINDISI LUGSAIL

frequent as they are in an archipelago of deep soundings and harbours where ground-tackle is often not of

GREEK COASTER

service, have had the effect of almost driving the not too daring Greek of the mainland off the sea. The

[1] Admiral W. Smyth's *Mediterranean.*

Greek islanders are of hardier stuff and much better seamen than their mainland brothers, and many of them are born and brought up 'in the sea,' as they say, and handle boats from infancy.

A large part of the trade and fishing of the Aegean and Levant is carried on by Turks, who, although not perhaps such skilled sailors as the Arabs and the

TURKISH COASTER

Moors have been, have yet all the courage and pertinacity of their co-religionists at sea.

These Levantine craft have a charm and beauty of their own. The high stem and stern and their light colouring give them a graceful 'boaty' appearance. The rigs are very varied, and incline to long masts and tapering spars. Long bowsprits and jib-booms are the rule, setting a whole variety of jibs; for when the high bow is depressed as the boat heels, it has a griping tendency which the long jib-boom

and extended headsails counteract. Staysails are carried when possible between the masts. For mainsails the sprit, the balance or Italian boomed lug, the gaff and boom, or the leg-of-mutton are used in infinite variety. In some of the last-named the sail is that of a regular Bermudian, and the arrangement of boom sails and staysails is often hardly different to that of the latest American 'staysail

TURKISH TCHEKTIRMÉ IN THE MARMORA

schooners.' Most of these sails come down with a run when a flame of wind flies down a valley to windward. There are generally two good sails in the boat for working into a convenient berth when the wind and sea begin to get up.

A favourite rig, to be seen alike among the islands of the Archipelago and in the Dardanelles, is the single-masted spritsail vessel carrying a square top-

sail, fore staysail, and one or more jibs. The mainsail is hauled out along an almost horizontal line to the spreet end. There is no boom, and the spreet is controlled by vangs. The sail can be hauled into the mast with great rapidity and ease, and it is a quick and simple method of brailing and reefing which commends itself to the cautious Eastern sailor. As a rule it is badly set, being cut to bag in a manner less artistic than serviceable, this mode of cut, dear to the Eastern heart, being more conducive to speed

LEVANTINE COASTER (LEG-OF-MUTTON SAILS)

when handled by those who understand it than we generally imagine, especially in heavy-laden craft.

The Turkish boat is built long of bow, low in waist, round of bilge, and high of stern. The latter is rounded and generally has the rudder slung outside on the curved stern-post. The ends are kept very light, masts and heavy gear being well inboard. The low waist is generally protected by a duck or canvas strake, which is easily removed in light weather for pulling, as in many of the Greek boats of the Archi-

pelago. These strakes are very necessary to keep out water when the craft is laden, and it is marvellous what sea and weather some of these larger *càïques* will go through when laden and pressed under sail with the water foaming along the waist-cloths in the most unsafe and reckless-looking manner, when only

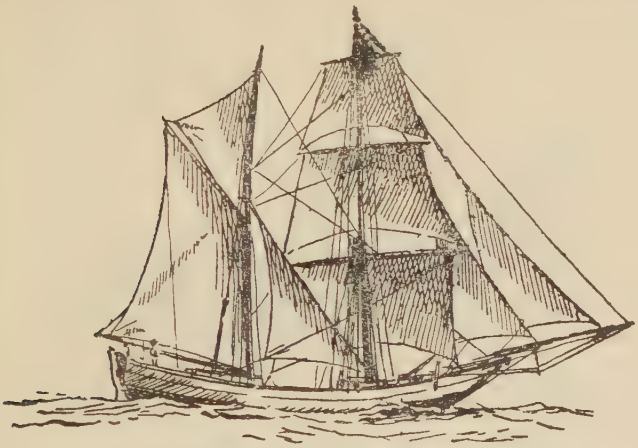
SMYRNA COASTER

the bow and stern, light and lofty, seem to be out of water.

This form of low-headed spritsail, and the long neat canoe-like shape with high stern, have been characteristic of the Bosphorus for a very long time, and are figured in a number of the drawings of Nicolas Witsen in his *Scheepsbouw* published in 1671.[1] These drawings show that the spritsail was a favourite with the Turks, and was used in a number of the local

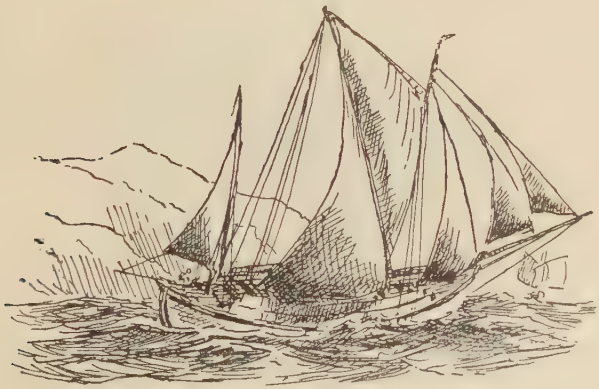
[1] Cf. *The Mariner's Mirror*, vol. xv. No. 2. April 1929.

trading boats of Constantinople and the Sea of Marmora. The sail was not laced to the mast, but



LEVANTINE BRIGANTINE—POLACRE RIGGED

had a loose luff hauled taut by bowlines. It was hoisted on a traveller with one mast-ring just below



OFF IMBROS

the throat to help take the strain from the spreet at that point. The tack was cut back in a curious

way, and in some cases the spreet seems to have been passed inside between the sail and the mast.

CAÏQUE, THE ORDINARY SMALL BOAT OF THE BOSPHORUS

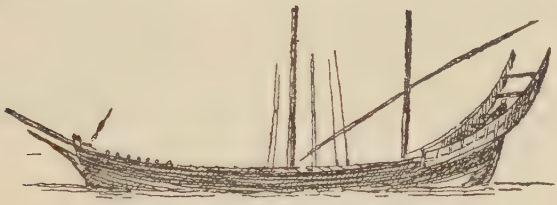
Some of the larger ones carried a main-topmast, fitted abaft the masthead, with main-topmast forestay to

CONSTANTINOPLE TRADER (AFTER N. WITSEN, 1671)

foremast head, by which it was bowsed well forward like that of any smart modern English topsail schooner.

Both masts were raked forward, the foremast, exactly like that of the Italian Balancelle, well over the bows.

The other usual Turkish rig of that day for trading vessels was the Saic (or Saicho or Sayke), a ketch



HULL OF TURKISH SAIC OR SAYKE (AFTER N. WITSEN, 1671)

with mainmast right amidships, carrying a big main squaresail, and a lateen-rigged mizen stepped forward of the poop. Their hulls were elegant, with clipper bow, a fine sheer; and in one case a pair of side-wings abaft the poop, exactly like those of a

TURKISH COASTER—BOSPHORUS

Chinese sampan referred to below, are shown in one of Witsen's drawings.

Simple sprit or low-yarded lateen boats are used for fishing and cargo-carrying in the Bosphorus. They have the same general features of build, and a fore

staysail or jib, and are known as *mahona*. Sweetly pretty craft in shape of bow and easy run many of these boats are.

But the most typical craft of Turkish waters, next to the *càïque*, the long-bowed, wide-sterned rowing-boat of the Bosphorus, is the polacre-rigged trader. This class of vessel was very common at the beginning of the nineteenth century, and although still met with on other coasts, as in the Tuscan *bombarda*, not quite

FISHING AND CARGO BOATS

extinct, it is most popular with Eastern Mediterranean seamen.

As a rule it is what we should term a pole-masted brigantine, but the name can, and used to, be applied to any square-rigged vessel having pole-masts, or masts without the usual Western topmast and top-gallant-mast and 'tops.' Polacre-rigged brigs appear to have been common in the beginning of the last century, to judge by drawings made by my grandfather from 1813 onwards.

As is implied by this description, the yards are lowered right down to just above the foreyard for furling; there are no foot-ropes, the crew standing on the yard below from which they can just reach to furl each sail above. There are no tops, and the mast has a peculiar tapering appearance not unpleasing to the eye.

The mainsail is either a balance-lug or of the fore-

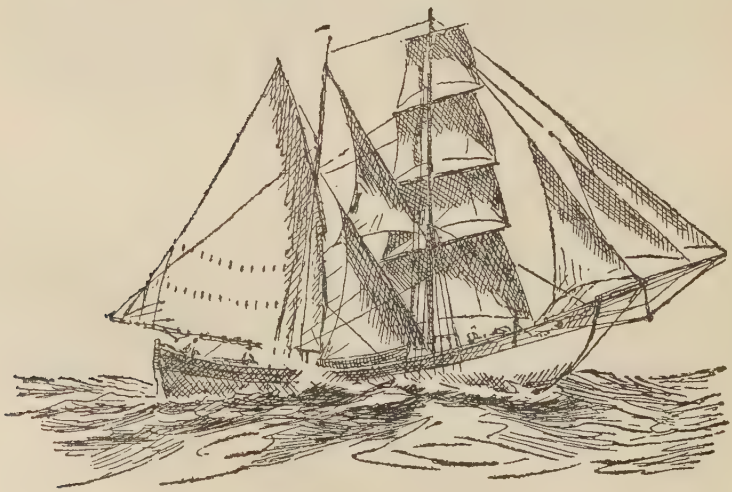
IN ALEXANDRIA HARBOUR

and-aft pattern, with very long boom, and the mainmast, in the latter case, is often in two parts, and is fitted with main and main-topmast staysail and jib-headed gaff topsail. It often acquires a tipsy-looking rake forward, while the foremast adopts a somewhat similar drunken rake aft.

The crews are inclined to bestow more pains upon the cleanliness of the sails and gear aloft than upon

that of their own persons or of their cabins. Yet some of these little brigantines are perfect pictures, and are greatly cared for by their owners.

I shall always remember the little vessel which we saw one night as we steamed eastward in a big mail steamer, a few hours before entering the Canal. The sun was low astern of us, when, crossing our bow close-hauled to a brisk westerly breeze, a white-sailed polacre brigantine of not more than 100 tons passed us. She was deep-laden, and her long bow had the look of a dolphin as she rose through the swell. She was sailing very fast, with every sail drawing full and bathed in the sun's rays, and she threw the spray off to windward in showers into the deep blue of the sea. The whole ship's company watched her in admiration until she was far away on our quarter—a beautiful vision come and gone of the lands and seas we were leaving behind us, some of us, alas ! for ever.



LEVANTINE BRIGANTINE, FLYING LIGHT

DHOW BEATING OFF RAS ALARGAH

To face p. 331

CHAPTER X

THE INDIAN OCEAN

The Indian Ocean, that sea of bright colouring, the home of the wide-sweeping monsoons, brings us to many old craft relics of the early days of man's seafaring.

Mostly fair-wind sailors, there are few vessels in this portion of the East of a sea-going character, as we understand the term, capable of keeping the sea or working off a lee-shore. Trained to the long use of favourable monsoon winds which are experienced in certain directions for considerable periods of the year, which come and blow and go again with unfailing regularity, the Eastern sailor with characteristic philosophy has as a rule resigned himself to the inevitable, unwilling to attempt to do otherwise than bow to the evident decrees of Fate, and take a fair wind when it is provided for him by a kindly Nature.

His ship is thus, as a rule, high-sterned to prevent pooping; she is fitted with sails of light calico material, and by way of rigging a quantity of ungainly cordage in various stages of decay.

Careful caulking and water-tight decks are alike generally unknown. Labour-saving appliances such as windlasses and blocks are rarely employed and

imperfectly understood. In short, for the most part, the boatbuilder of the Indian Ocean is content with a fabric that will float on water and protect

THE GAIASSA IN WAR (FROM A SKETCH BY MAJOR-GENERAL SIR NEVILL SMYTH)

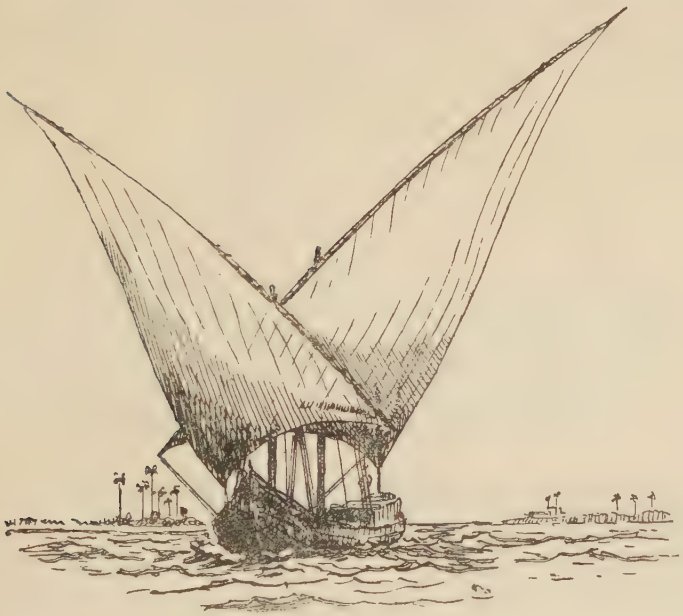
him from the sun, and carry his whole family with him on nearly all occasions.

Of the warm rain or breaking seas he does not much reck; they refresh his body, wash out his

clothes, and cool his vessel, and he has no great quarrel with them. Hence they generally find access to all parts of his ship when in strenuous mood; but, as usual, there are exceptions.

The Gaiassa of Egypt

Of Arab build and rig, and therefore really of Asiatic origin, the Nile *gaiassa* is now a fairly historic



NILE GAIASSA

craft. Not only has it given birth to its glorified and fashionable offspring the *dahabia*, the luxurious home of the pleasure-seeking American or Briton, but it has proved its utility as an engine of the British Empire. It has taken a brave and arduous part in three campaigns, and shares with the mule, the

elephant, and the camel, the distinction of having ministered to the wants of the British soldier on the march.

Yet the gaiassa is in reality only a wall-sided canal barge in build, with a lofty and pretentious-looking stem,[1] and a disproportionately vast rudder. Her sole claim to our admiration lies in her splendid lateen sails. These wings still bear the Arab name 'Kala trinkeit.'[2]

The mizen is probably a comparatively late addition to the rig used in the larger boats, as in the sea-

ANCIENT STEM, FROM A MODEL IN THE GIZEH MUSEUM

going coasters of the Red Sea, for sailing on a wind or for setting goose-winged going free. This mizen has of late years very much increased in area, especially since the development in size of the boats themselves, until now a large proportion of the Nile craft leaving Cairo with a fresh wind will be seen to carry what amount to main and foresails.

[1] This peculiar bow may be derived from a high stem which was in vogue in certain Egyptian boats which had a similarly exaggerated rise, as shown in certain old models in the Gizeh Museum.

[2] Kala—sail; trinkeit—trinchetto: the foresail of the old Mediterranean lateen-rigged craft, which, as already indicated, came from the Arabs originally. The French *arbre de trinquet.*

No one who has seen the gaiassa under way can fail to be impressed by the length and power of its great lateen sails, and no picture of Egypt is perfect without that tall pyramid-point of white canvas gliding along the sky-line.

As is so often the case among a boating population, the fishermen and the gaiassa crews are a people apart. They have their own thoughts, their own ways, their own life, unaffected to a large extent

GAIASSA, CLOSE-HAULED

by the life over the banks above them. To a European seaman's eyes their ways are peculiar and perverse; nothing can be more astounding than to carry your main-yard over your masthead, and even when close-hauled to carry your sail set well to windward of the weather rigging. Yet the gaiassa captain does this and much more, and he arrives just the same at his destination.

One had been led to suppose that the gaiassa skipper never attempted to beat to windward, that

he and his ship were only good for fair winds, and that when in any difficulty he could only appeal to Allah, and tear his beard.

Yet my friend Hassan Mahomet in an eighty-foot gaiassa rather enjoyed a head-wind provided it was at high-water season and he could get the wind 'true' over the banks, and he was well laden. For he said it tested his rigging and showed that his gaiassa was better than any of the white-painted dahabias which can only row against wind, and for which he expressed the greatest contempt. And

ABREAST CAIRO

he was accustomed to warp out of the locks at the Barrage against a strong current, without so much as a curse or a prayer, by the hands of himself and his two sons, and the help of God. He knew how the upper air was blowing, and by bracing in his tack-rope he had a fair wind in the upper thirty feet of sail although all was calm below that level.

His main-yard was 84 feet long,[1] and his mizen 50 feet. One was at first inclined to shudder at the

[1] The writer has measured a main-yard on a dahabia 134 feet long, and another 114 feet.

length of spar, but one soon found that with the very short foot to the sail and the angle which the whole can be given by slacking up the tack-rope, there is, even on a wind, very little leverage likely to cause a capsize. Moreover, owing to the give in the long-yard, the upper portion of the sail does not hold the wind when close-hauled, and on this point of sailing is generally flapping for a long distance down the leach.

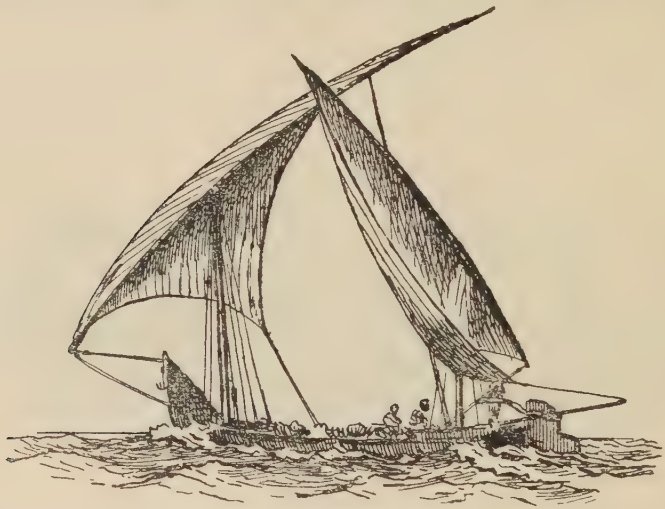
GAIASSA—WIND COMING FREE AFTER A BEAT

If small craft are capsized more frequently, it is because there is much less play aloft. Their yard is stiffer, and the tack tackle is often tauter in and irretrievably belayed. If under such circumstances the sheet is also belayed out of reach, a capsize is a manœuvre of no real difficulty in a fresh breeze coming tricky off the land.

The sail is generally set on the starboard side of the mast, although the yard can be shifted over the rope padding on the masthead if necessary. In going to

windward even on the starboard tack, the heel of the yard goes far out to windward and ahead, and the sheet is hauled down taut. The tack tackle is slacked up and then adjusted to give the required tautness to the leach and foot, and thus ensuring a true lead for the sheet of the sail.

There is a vang about a third of the distance in from the peak of the yard, and strong tack tackle goes from the heel to the high stem. There is a brail-



GAIASSA RUNNING

rope from the sheet earing to the masthead, and when taking in sail this is hauled up and the wind spilled ; the sail can then be furled by one or more men going on the yard as may be required by the size of sail and strength of wind. A long line is generally used for tyer, with a number of running hitches, which with a series of pulls from the deck can be shaken free one after the other when setting sail.

The mizen is generally a beautifully cut and shaped

sail, and stands far better than the mainsail on a wind. The Arab sets it at all manner of queer angles when off the wind, and its lateen shape lends itself to being handled in a variety of ways.

The boats are quite flat-bottomed, and about five or six beams to length. The high bows which are so peculiar are decked at a steep angle right up to the stem-head. The bottom is protected by a certain amount of keel-piece forward as well as aft, but this

FLOOD-TIME

gradually runs into the hull amidships. The reason of this keel appears to be as much for protection in grounding, which is necessarily of frequent occurrence among the ever-shifting channels, as for the purpose of giving grip in the water.

The high bow and mean stern are a peculiarity of many Levantine small boats, but are nowhere more accentuated than in the gaiassa. The top-strake is very often built up with planks set in dried mud,

and partakes more of the coffer-dam than of naval architecture. It is generally inside the gunwale, thus leaving a track outside for the men when quanting. Owing to this coffer-dam construction being used also to end off the clumsy transom-stern, the rudder of a fully laden gaiassa often appears to be detached from the stern, and by some strange device to be towing at some distance behind the boat.

But with her strange combination of clumsiness, of serviceableness, and of beauty, the gaiassa is undoubtedly not the least remarkable of the wonders of Egypt.

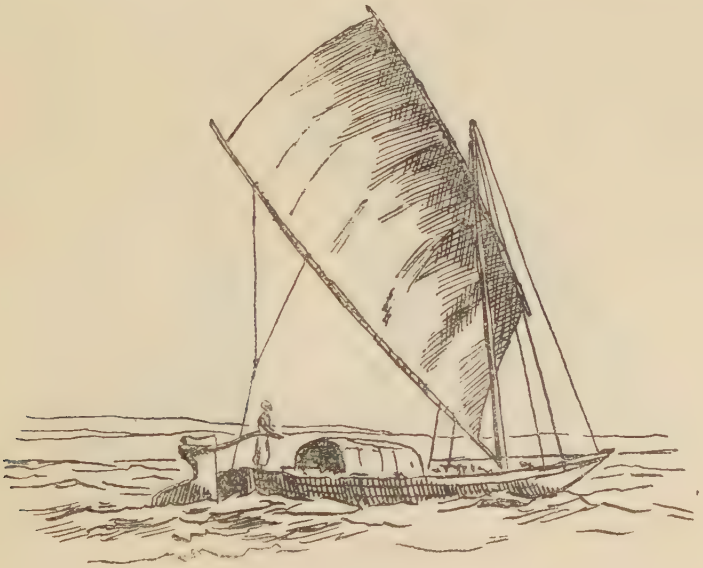
The other Nile boat known well to British and Egyptian soldiers is the less picturesque but not less useful *naggar*, which has its home upon the waters from the third cataract southward.

The naggar is not an aristocrat, and has no notions about personal appearance. One who knows her well declares she never paints. However that may be, she is of the roughest in material and appearance. She is constructed of stout baulks of 'saut,' or heavy *acacia pilotica*, pinned together by long iron nails clinched on the outsides.

The rig is a single balance-lug with a boom along the foot, which is so set as to top the leach of the sail up in the air like that of some of the Pacific Islands canoes. The lateen is rarely used as yet, although coming into favour. Imported spars are much in vogue, but in default the masts, yards, and booms are generally of Kakamut wood from the upper Nile. These boats are all sizes—from thirty feet upwards—and have the heavy gaiassa form of rudder. In coming northward down river, and

against the prevailing wind, they are fitted with outriggers and long sweeps, and rowed double-banked. As in many parts of the Far East, the men stand to their work facing forward, and take two or three steps at each stroke.

In descending a cataract or rapid the Nile boatman profits by the up-stream wind to head his ship up-river, and sets sufficient sail to keep way against



NAGGAR

the current. Thus while the vessel keeps steerage-way and is well under command, he steers her slowly stern first down the rapid. If the wind lightens, or the stream gets stronger or more rocky, he makes sail; and when the boat reaches slacker water, sail has to be proportionately reduced. The enormous rudder of both gaiassa and naggar is thus explained, it being used with great effect, as in other fresh-

water craft which navigate in strong currents, to swing the boat athwart the current, or swing her head up to it when rocks are threatening. The Thames bargeman knows something of the same art in going through bridges on a strong tide; but the latter is admittedly tame in comparison with taking a Nile rapid stern first.

The ancient Egyptians were adepts at Nile drifting,

THREE-MAST GAIASSA, NILE DELTA

and Herodotus gives an account of what is, I think, the earliest form of 'drogue' which is known, made of wooden frame and matting, by which the boats' heads were kept down-stream and travelling with the current, while a stone sinker was used towing deep at the after-end to 'keep the course straight.'

The lower waters of the delta of the Nile and the Suez Canal and its salt-water lakes make a large navigable district for shallow big-sailed boats, mostly

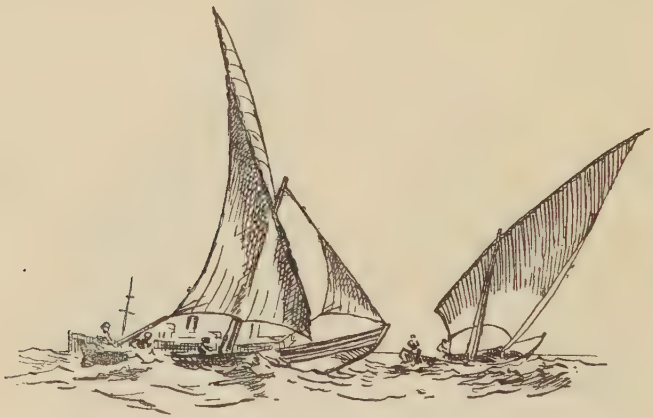
of the gaiassa style. The lofty and very narrow form of sail shows that they are accustomed to inland waters, in striking contrast to the lateen of the Western Mediterranean, or even of the sea-going dhow of the East. Great as is the interest of the upper Nile, this land of the lower delta is even more full of picturesque and peaceful Eastern life. It is the home of a simple and hospitable folk, who

SUEZ SHORE-BOAT

live by and upon the wind-swept waters of Lake Manzala and the big winding waterways leading to such places as Damietta, Ismailia, Alexandria, and Port Said, where much boating activity of interest prevails. The pelican and the kingfisher and countless duck add interest to every day's sail; and although the villages are more squalid generally than those of Upper Egypt, they are not lacking in beauty and quaintness and in the charm which

the wide horizon of a fen-like country always has to offer.

At Suez a seaworthy type of lateen boat is used much more of the strictly Arab build. There is a long, sharp-pointed, overhanging bow with sharp sections, great beam amidships where the mast is stepped, and a raking transom-stern. They have the horizontal painted lines and the white bottom so frequently seen in Arab sea-going vessels. The sail is of the Arab cut, with several feet of luff below



SUEZ SHORE-BOAT

the heel of the yard. It is invariably set on the starboard side, and the tack, as in the Adriatic lugsail, is carried well off towards the gunwale in order to keep the sail off the mast and prevent a backsail when on the starboard tack, and especially when close-hauled. In fact, in these boats it is brought right to the gunwale on the starboard bow. The yard is generally kept standing, and the sail hauled out along it by an outhaul when set, as in many small Mediterranean lateens, and in the Cambodian lugsail

boats of the Great Lake. When furled it is bunched in at the mast, but the fore triangle of course remains. It does not, however, hold much wind. A small fore staysail is used in the larger boats, and is a great assistance both to speed and staying power. These boats in a strong wind are very well handled by their swarthy crews notwithstanding the long white robes, which, when wet and wind-blown, form no small handicap to agility.

The Dhow

No craft has played a greater part in the world's history than the *dhow*. The lateen yard is as much the emblem of the Faith as is the crescent. Wherever the great Mohammedan creed has been preached, wherever the sword of the Faithful has carved its gory path, there the lateen-sail has heeled to the wind and the long grab-bow has cut its way. Thus the lateen is the rig to this day of all the Mohammedan, and not a few Christian, sea-coast people from Malabar to Gibraltar.

The true *baggara*, *bagala*,[1] or Arab dhow,[2] the probable parent of all the lateen-rigged offspring, is now mostly to be met with in the Red Sea and eastward to the Persian Gulf, Karachi, Bombay, along the Malabar coast as far East as Rangoon, and down the coast of Africa as far as Zanzibar, making its voyages with the fair wind of the favourable monsoon, and quite capable of holding its own in the hard weather often to be met with in the Indian Ocean. In fact its range is far greater than almost any type of European craft of similar tonnage.

[1] = 'mule,' and therefore a cargo-carrier.
[2] A small class is known in the Red Sea as *sambuk*.

Next to the Chinese the Arabs have been the most skilful and daring seamen of the ancient East, and in the dhow they have devised a fast, able, sea-going type of ship, not a whit less remarkable than the junk.

Notwithstanding local differences of detail, these vessels vary very little as a class. They are generally grab-built, having a long overhang forward. There

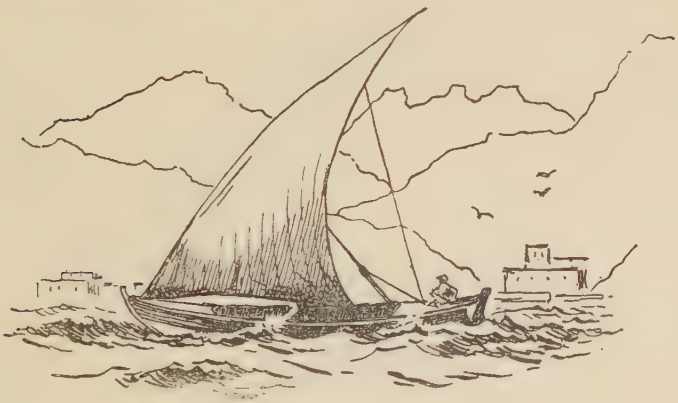
IN ADEN HARBOUR

is great beam and rise of floor, and a very raking transom-stern. The shell planking secured to the wooden frames is generally worked in two thicknesses, with a layer of composite between, thus making the craft very dry and giving great durability. In fact, many of the dhows still to be met with are much older than their owners, and have been sailed by three generations of skipper—grand-

father, father, and son. There is generally a high poop and fo'c'sle deck, the rest of the vessel being practically open. Dunnage or cargo-battens are nailed to the inside of the frames to keep cargo off the bottom, and rough planks laid loose over cross-beams provide a fore-and-aft gangway.

The *pattamar* used for the Bombay coasting trade has generally regular bulkheads dividing the poop and fo'c'sle from the hold.

The rig consists generally of main and mizen



ADEN OPEN BOAT

lateens. The mainmast is a big spar stepped amidships, with a great rake forward, to enable it to carry the great weight of the long lateen yard in the right place. This yard is generally about the over-all length of the boat, and in the larger baggara it often consists of three or even more pieces spliced together. It is hoisted by a stout halyard, often in two parts, passing from the fore side through a sheave at the masthead, with an enormous three-sheave wooden block strapped to the end. The

purchase leads to a four-sheave block placed just in front of the poop.[1] There is very little rigging, usually a forestay and a couple of runners on each side. The sails are seldom reefed, but two or three sails of different sizes are carried, to be bent according to the weather.

The mizen-mast is a much smaller spar, stepped well inboard a few feet from the fore end of the poop, with a smaller rake, however, than the foremast. This sail is seldom set when off the wind, but is used

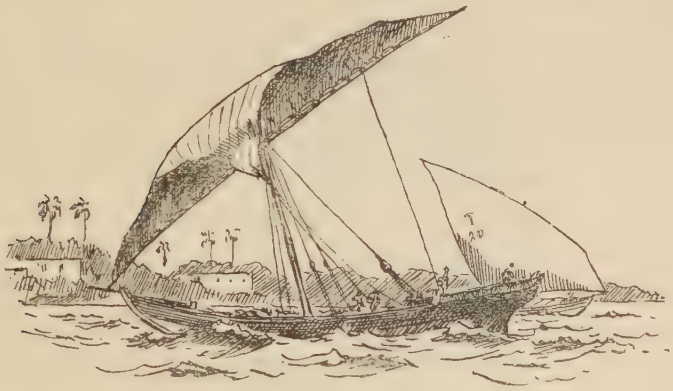
BATELO

in beating to windward, a point of sailing in which, like most Eastern sailors to whom time is no object, the Arabs but seldom indulge. None but a fool, or the impatient Western, will beat against a head-wind if there is an anchorage within reach.

In changing tacks the Arab puts his helm hard

[1] This appears to have been the usual lead for the main halyard in the ancient Egyptian ships used in the Red Sea in the Punt Expedition about 1600 B.C. (*v.* Holmes's *Ancient and Modern Ships*, and Torr's *Ancient Ships*). It is similar to that of the Nordland jaegt of Norway (*v.* chap. iii.).

up, and wears round, letting the sail fly out forward, and the yard come round over the masthead; the sheet is then caught and hauled aft on the new tack, for which, of course, the ship must be luffed to the wind in order to spill the sail in the absence of any proper tackle on the sheet. In the Mediterranean the lateen is allowed to stand against the mast; but, though the heel of the yard may stand some way out to windward, a certain portion of the sail is liable to be 'aback' against the mast and form a 'back sail.'



GYBING TO CHANGE TACK, ZANZIBAR

The Arab sailor has his own ideas of painting his ship,—a light-coloured bottom, black topsides with two white lines, the lower one of considerable breadth, are the rule. The poop is generally considerably ornamented, its windows or ports, of which there are often a number, being picked out much in the style of the old wooden sailing-ship of a century ago.

There is, it must be confessed, a good deal of that happy-go-lucky, loose-rope-end style about the seamanship of the modern Arab sailor, which for some reason or other seems well-nigh inseparable from the

East. The old-time sea-song has not gone out of fashion in the dhow any more than in the junk, and there is the same inability to keep quiet and execute orders in an emergency.

Getting up sail is a very lengthy, not to say noisy, operation. The yard and sail are very heavy, and take the whole force of the seventeen men or so who form the crew to hoist. When all is ready an old man begins a chant in a high-pitched falsetto shriek ; the hands yell ' Ho ! ' and pull more or less together. They then keep time by calling out the name of Mahomet, or some sheikh or place, the name being always started by one man and taken up by the rest as loud as lungs permit, very much after the style of the old sea chantey of the square-rigged ship. It makes, however, little difference to the Arab what is called out, so long as plenty of noise is made.

It takes half an hour to get up sail in ordinary weather, and more if there is any wind, while shortening sail is an equally lengthy process, and in squally weather becomes really dangerous, as no attempt is usually made to begin operations until the force of the wind is becoming heavy.

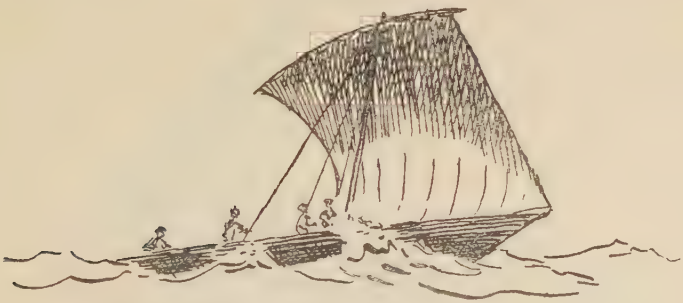
The sail is often furled on the yard standing, one man going aloft and starting at the outer end, and in light winds he goes on furling and tying up the bunt steadily all the way down until the whole sail is furled.

The usual occupations of a crew include laying up rope from small pieces of rough bass, of which an unlimited supply is generally carried. They also occasionally wash their solitary garment, made of blue or white cotton after the fashion of a nightgown, this being preceded as a rule by a careful examination

of all the folds for lice, with which too often the older craft are infested.

The crews are very easily alarmed, and lose their heads in an emergency in a manner which would do credit to a Russian battleship. They mistake lighthouses for ships, and tide-ripples for sandbanks, and every discovery of the sort is followed by a wild scene of excitement and confusion, accompanied by screaming and shouting from every man on board.

Three kinds of dhow[1] used to be generally recognised on the African coast: the *bugala*, or *bagala*,



FISHING CANOE, OFF RAS IMRAN

the genuine dhow (which is the most numerous), the *bateele*, or *batelo*, and the *badane* of Persia and Arabia. The *matapa*, a light open boat, which was used a great deal in the slave-trade on the rivers and estuaries, is the only type of boat which is not of dhow origin. It has a square sail, and is really of the more primitive canoe type. It yet has a deepish

[1] The usual dimensions of the larger *baggara* are: Length, 85 feet; beam, 21 feet; depth, 12 feet; tonnage, 200.

The *pattamar* varies from 60 to 200 tons; the dimensions for the larger class being: Length, 76 feet; beam, 22 feet; depth, 12 feet.

The *batelo* is only about 30 tons; length, 51 feet; beam, 10 feet; depth, 4½ feet; and the Red Sea *sambuk* is generally from 18 to 20 tons only.

forefoot, and sets the tack of its peculiar-looking sails very far forward in a manner which bespeaks Arab influence. This type of boat one has seen in a heavy onshore sea off Ras Imran, making wonderful weather of it to windward. It appears now to be

ZANZIBAR GEHAZI

used chiefly for fishing purposes by the Somalis, but is not often met with.

The *Gehazi*, which is the local name of the Arab dhow south as far as Zanzibar and Dar-es-Salaam, is of the same build practically as the Red Sea *sambuk*. Some of these boats are of first-class size, and are in fact true *baggara*, with high poops, mizenmast, and all complete. Others omit these two features, but

retain the others generally characteristic of the smaller Arabic seafaring vessel known as *batelo*.

Much interest inevitably attaches to these vessels, for they are the same to-day as they were in the early part of the last century, when the British Navy carried on against them upon the coasts of Africa, and especially upon the east coast, what was practically a long-continued, difficult, and dangerous war. Before the construction of the Suez Canal, communi-

GEHAZI, CLOSE-HAULED

cation with the whole of this coast was slow and uncertain, and the British public never fully realised the arduous character of this service, or the remarkable success achieved by the patience and perseverance of the officers and men of the Royal Navy in the face of the greatest difficulties and dangers.

A few records of the service remain which will repay study, if only to show what could be done in navigating open boats by men who knew true discipline and had no souls for notoriety.

But more than this: it is to these old *gehazis* and their forerunners that we owe the only civilisation which has ever reached and touched the life of the East African native.

The old builders of the Great Zimbabwe, Semitic or otherwise, came by sea. They disappeared, and practically left nothing of influence behind them.

The Arab came in later times, and if he brought a curse to many in the slave-trade, he yet converted a third of Africa to the faith of Islam, and he introduced hundreds of thousands of negroes to some form of Eastern civilisation which they would never have known and still less risen to but for him. The Zanzibar of to-day is no African kraal; it is an Asiatic town set in Africa.

A considerable dhow trade still takes place with the favourable monsoons between Zanzibar, the emporium of East Africa, and Muscat and other ports of Arabia; but even in the north-east season one may meet a baggara heading northward within three hundred miles of Cape Guardafui.

A smaller class of Zanzibar vessel is the *mashuwa* or open fishing-boat worked by the Arab of the neighbourhood. They are generally dilapidated little craft with the usual long bow and transom-stern, and are painted once in a lifetime with the usual black and white. The black turns gradually greyer, and the bolts rustier, and the water leaks in more freely, until the little vessel is almost falling to pieces, ere her owner thinks of giving her another coat of paint.

They all follow the same weird method of changing tack already referred to, by wearing round and allowing the sail to fly out round the yard. As the vessel comes round to the wind, the sheet, which is spliced

into the clew of the sail to prevent its getting adrift as it whips to and fro, is hauled in by the crew. Nothing more cumbrous can be imagined, but the long grab bow spins round in a less turning circle than would be taken by longer-keeled craft, and the stern has an appearance of flying round, and once the wind

SMALL ARAB 'MASHUWA,' ZANZIBAR
(FROM A SKETCH BY GENERAL SIR NEVILL SMYTH)

takes the other quarter she is in the wind's eye again in no time.

The Bombay boats carry this turning power to a fine art, and there is a story of an old English sailor who, when he put the helm up, got so giddy at the speed with which his strange prize flew round that he forgot to check the helm, and the boat went on turning circles, to the wonder of the onlookers, until

at last he got over his surprise and steadied her on her proper course.

As regards speed, there is no doubt that the Arab build is unsurpassed in a fresh wind. If the Arab seamen of to-day could or would set their sails as the Italian lateeners do, they would have not only one of the fastest but also one of the most weatherly of seagoing vessels. Occasionally one has seen a piece of sailing from one of these vessels which was of the highest order. I especially remember one carrying on and beating off the lee-shore off Ras Alargah in

'MASHUWA'

a strong onshore wind, which gave one an idea of what the dhow can do in capable hands such as she must have had on board on that occasion.

But as a rule the sail, being made for fair winds, is of too light material to stand on a wind, notwithstanding the peculiar make of the sail, which, besides being heavily roped all round, has a rope border sewn into each cloth which runs from the head-rope to the foot. This is one of the causes of the very hollow foot in all the Arab sails, but at least there is no large belly in a sail thus made. On the other hand, the sail

does not present a smooth surface to the wind, there being ridge after ridge of tautened rope running at right angles to the direction of the wind off the sail, and this is especially bad after rain. It tends seriously to prevent the sail being a good one to windward. This style of make is also almost universal in the Indian craft.

India

The general types of large trading dhows on the Bombay and Malabar coasts have much in common

BOMBAY MASHWA

with the Red Sea *baggara*. They may be studied along these shores reclining at all angles on the sands at low water, moored with vast bass warps, their long yards on deck, and their remarkable high bows and snub-nose bowsprits sticking into the air. They carry a small jib forward, and the mizen is more often bent than with their Red Sea sisters, and is in fact a feature of the Indian sea-going craft. They are often of very sound construction, being built of teak or jungle wood, the planking being properly bolted

to the frames and caulked with cotton and 'chunam' oil. Some of the larger pattamars, baghlas, and kotias are copper-bottomed. Their ability to stand rough weather is undoubted, and is a constant surprise to Europeans who meet them at sea.

There are many variations of the Pattamar and Baggalo (or Baghla)[1] among the sea-going dhows of the Malabar coast. While their main characteristics are the same, the differences are generally inconspicuous to the European observer, and consist not so much in variety of rig as in details of hull. Like most oriental craft, the various types are generally named after these variations of build rather than those of rig. For instance, the shape of cut-water, the build of stern, whether sharp or transom-built, the build of the poop, or the kind of work on which she is employed, all give names according to the local custom and pronunciation. The Kotia of Cutch is a typical instance: she is really a small Baghla, carrying the usual two-mast rig, and having poop and carved, square, heavy-looking stern with curved projection at the quarters. She has a 'parrot-beak' at the stem-head, which is the distinctive mark of all Kotias. The poop is generally properly planked and fitted out with steering-wheel, binnacle, and capstan, and is often ornamented with painted rails and seats.

The Battala (the same now probably as the Batelo of the African coast) is a smaller type of square-sterned craft with the usual rig, but without properly planked poop.

The term Mashwa, or Mashuwa on the African coast, is applied apparently to any small round-stern vessel,

[1] 'Baghla,' or 'Baggalo,' is really the Red Sea 'Baggara' loosely pronounced or slightly varied.

meaning originally a fishing-boat. The larger sea-going craft all carry a small 'mashwa' on deck, as well as a 'jali' boat (jolly-boat) slung across the stern above the poop. Bombay Harbour and the neighbouring creeks are full of single-masted Mashwas engaged in fishing or cargo-carrying and passenger traffic up the creeks.

The newcomer off that beautiful harbour is aston-

A KOTIA

ished at the speed and weatherliness these boats display, even in the heavy onshore sea which comes with the monsoon.

They have the very sharp bow with hollow lines familiar in most species of dhow; the stern, which is greatly raked, is not nearly so striking to the eye, but is full and round. The keel is often arched, which gives a most peculiar appearance to the boat

when out of water. The sharp, deep forefoot takes the place of the modern dagger or fin keel, lately so common in our small-raters in home waters, and adds enormously to the weatherly and turning powers of the boat. The whole sail area is placed very far forward over this portion of the boat as in the dhow, the centre of effort and centre of lateral resistance being thus given almost the same relative positions as the designer of a Clyde or Solent rater would choose. Yet to look at the Mashwa for the first time,

FISHING MASHWAS—S.W. MONSOON

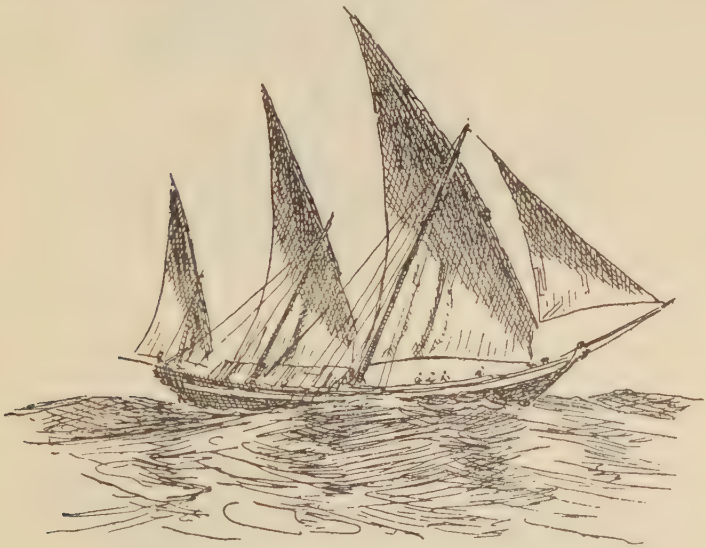
one would think that she must infringe every principle known to Western boat-builders. In reality she arrives at an almost identical result, albeit by a method most peculiarly her own.

Other interesting types include our old friend the Red Sea Sambuk, the Padow or Padas, a large vessel running from the ports north of Bombay, generally having painted ports along under the poop, and a number of small local craft known as Hodi, Toni, etc.

The Nauri is a fine class of dhow from Sind and

Cutch and the Baluchistan coast ports generally. She has a painted stern and ornamented stem-head, and is credited with being an exceptionally fast vessel. She is steered by a wheel and barrel on the poop connected with the tiller below the poop deck.

But it is the Pattamar proper which is the lord and father of all the Malabar craft, and runs to exceptional tonnage. The Portuguese found the name

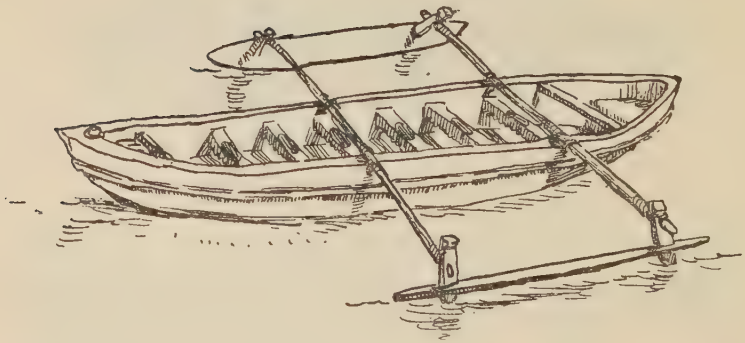


THREE-MASTED PATTAMAR

when they first penetrated the Indian seas. It is probably a Hindi name meaning messenger or despatch vessel, converted by the Mussulman seaman to Phatemari—the snake of victory. Large, fast, and able, with great sheer, they generally have square sterns, but no high poop. In place of this they have a bamboo and palm-leaf deck-house running almost to the foremast. They range the whole of the coasts from Colombo to Aden, and are distinguished by their

red paint and black gunwales and the globe painted in bright colours on the stern.

OFF BEFORE IT!



ARAB DUG-OUT 'GHARAWA'—17 FT. BY 2 FT. 6 IN.
(Upper strake pegged on; gaily painted to attract market-women.)

Many of these craft when loaded and making sea-passage follow their co-religionists the Turks and other seamen of the Levant in raising their low waists

by wash-strakes of palm matting to keep out the sea. They carry two to three suits of sails of varying sizes to suit weather conditions, but bend and unbend them as required. They do not generally carry a spare small yard like the Tartane of the Mediterranean, but can always make a lash-up of a new yard if required from the collection of odd spars generally carried on board for all sorts of purposes.

The lateen reaches as far south as Ceylon, where it is seen in combination with staysails and fore-and-aft

ON THE HUGLI

mizens, not infrequently with the outrigger, which is such a striking feature of the Cingalee boat-building.

The outrigger appears to be scarcely a true Asiatic method of construction, and has probably come up to Ceylon and Zanzibar from the south and east. It is the first effort of the savage to afford stability to his dug-out.

The dug-out form of construction is the simplest and most effective for navigation in protected waters, and in capable hands. In well-timbered countries,

such as Burma and Siam, long craft of 100 feet by 8 or 10 feet beam are often made in this manner, and are heightened when necessary by the addition of top-strakes at the side. But the fault of the dug-out is always lack of beam, and therefore of stability.

The poor fisherman with his humbler boat, who

GANGES COUNTRY BOAT (AFTER PHOTO BY A. COCHRAN, C.B.E.)

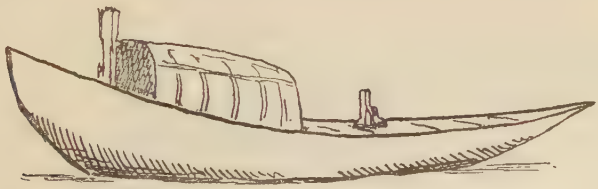
needs to carry fish, or nets, or rice, soon feels the want of stability of his boat.

On the Me Kawng, the great river of Indo-China, the Lao boatmen tie bundles of bamboo along the gunwales of their dug-outs, many of them going 60 feet in length, by this means not only giving such stability to their boats as to render a capsize even in the most violent rapids wellnigh impossible, but also rendering them unsinkable by reason of the air compartments provided by nature in the bamboo.

This form of outrigger, or side air-chamber, would probably prove very efficacious at sea, but it has the disadvantage of greatly retarding speed.

BENGAL 'MALAR PANSHI'

The sea-going canoe-man has therefore more generally adopted the better known form of outrigger



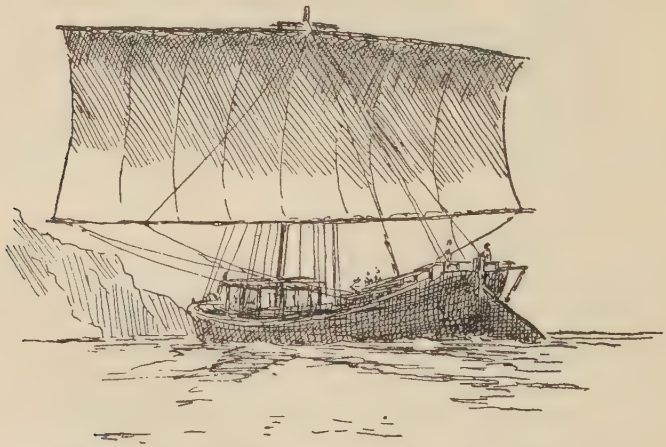
BOAT FROM THE TOMB OF MAHITI, PRINCE OF SIYUT

'floats' fixed parallel to the keel of the boat at a distance of two or three beams, by two or more transverse pieces, as in the *Gharawa* of Zanzibar.

These outrigged floats, like those fitted to sea-planes, in no way retard speed, but, floating lightly

NEAR BURDWAN

on the surface, give great stability, and enable the smallest dug-out to carry a press of sail which renders them very speedy off the wind.



UPPER INDUS SQUARESAIL (AFTER PHOTO BY A. COCHRAN, C.B.E.)

It is in the big rice-carrying boats of the rivers and canals of India that we find ourselves in the old world

of boat construction which has long disappeared from more Western lands.

The *pulwar* and *malar panshi* are both typical types of the old-fashioned boat architecture of Hindostan, the rig that of the simple squaresail, the hull either a long dug-out in general form reminiscent of the main outline of not a few ancient Egyptian boats, or built on a dug-out frame after the manner of many Indo-Chinese river boats. In every case there is the high steering platform, and either the primitive form

'PULWAR,' BENGAL

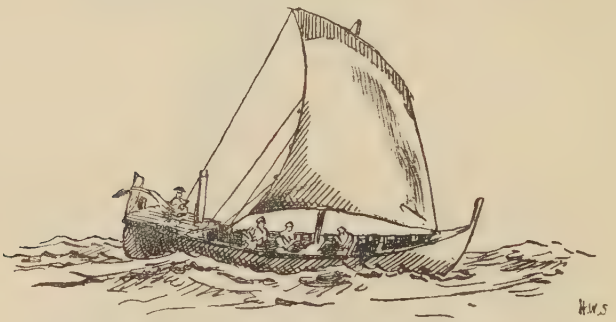
of fixed steering-oar turning upon its axis, and fixed to the hull, which is seen alike in the Lao river boats in Siam at the present day and in the Egyptian vessel of the eighteenth dynasty, or the peculiar Indian balance rudder in which a considerable portion of the area of the rudder is placed forward of its turning axis, which is essentially a development of the former by a mere increase in the size of the blade.

The *dinghy* of Calcutta is a striking old-world form, admirable in construction and design. Although not

a true sailing-boat, it carries sometimes a low sprit-sail to assist its rowers in the strong tide of the Hugli. Its form is strangely like that of an ancient Egyptian boat in the Gizeh Museum from the tomb of Mahiti, Prince of Siyut.

The Maldives

Of true sea sailing-boats the Indian Ocean has but few with any great peculiarity of mast and sail. The Maldive Islanders, formerly contented with the mere



MALDIVE OPEN BOAT (FROM A MODEL)

outrigged dug-out, have in the last half-century developed some quite good boats of their own.

With high stem and stern and peculiar short-yarded lug-sail, the open boats remind one not a little of the Sondmöersk yawl of Norway, but with the true Oriental love of a high seat for the steersman, the ἑδώλιον of Herodotus and Euripides, they have improved on the more Northern model to the extent of a flat platform aft upon which the helmsman is accommodated. The hull is of a particularly wholesome and able type for an Oriental model, with clean lines and easy run.

The larger class of boat is decked in with somewhat

elaborate and comfortably arranged deck-houses, and

MALDIVE DECKED BOAT

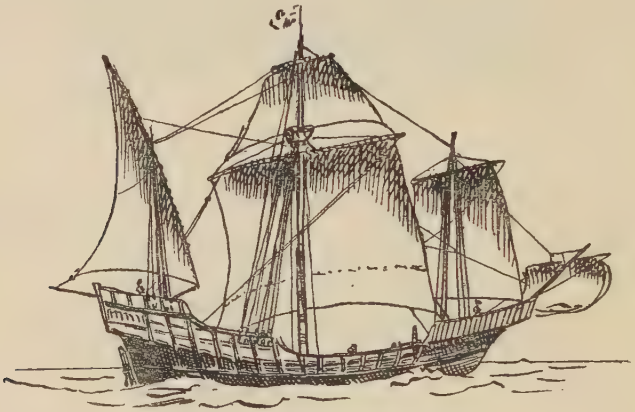
carries a small topsail in fine weather. The powerful grip of the forefoot, the only resemblance to the

MALDIVE TRADER

dhow build which it presents, enables the centre of effort of the sail area to be placed far forward.

These boats have power and speed, and are a fine class of sea-boat.

The most remarkable vessel, however, is the larger Maldive trader, running to a hundred tons or more in size. She is fully decked, with considerable deck-houses and big overhanging forecastle, very like that of Columbus's ship the *Santa Maria*, and other vessels of the fifteenth century.[1]



FIFTEENTH-CENTURY CARAVEL

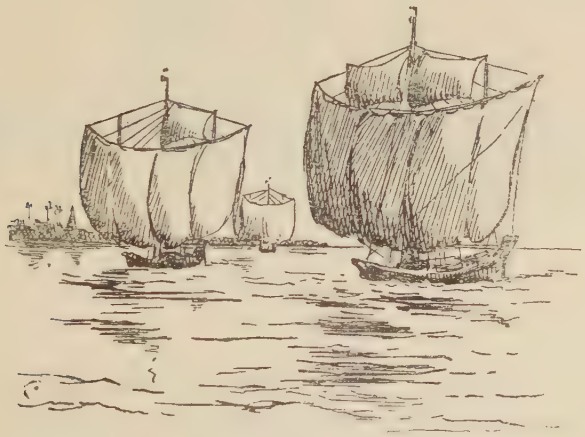
The rig, moreover, is the three-mast arrangement which was general in Europe about that time. A tall mainmast carries a big main squaresail set high up with topsail and occasional small topgallant sail. The mizen carries a fore-and-aft gaffsail, taking the place of the lateen mizen in the fifteenth-century ship. Forward is a raking foremast carrying a square

[1] It is noticeable that in the main outline of hull, in the general disposition of the three masts, and in the simple squaresails, the caravel of this period had altered but little in general plan, although largely improved in detail of construction from the ships of Pliny's time, and even the single topsail appears to have been known as early as 50 A.D. See Torr's *Ancient Ships*, Holmes's *Ancient and Modern Ships*, etc., etc.

foresail well out over the bows, in the same way as the ancients set their ἀρτέμων. One may meet these vessels occasionally as far north as the Hugli, and with fair monsoon they are rapid passage-makers, but beating to windward is not their forte.

Burmah

Although only a fair-wind sailer, one of the most remarkable craft to be met with is the Burmah rice-



UPWARD BOUND

boat, one of the biggest and smartest forms of river boat in the world, and very far ahead of the rough Bengal rice-carriers in every particular. Owing to the prevalence of the southerly sea breeze which blows up-stream for many months after the end of the cool season, these boats are rigged only for running up against the stream. When going against the wind they punt or pull along with the current, and never beat to windward. The squaresail, or square-headed lug, is the only sail practically known in Burmah.

And in these boats the mast is a triangle formed of two spars meeting at the apex in a manner already familiar to us in ancient Egyptian drawings of the third and fourth dynasties,[1] and still also used in the Red River of Indo-China. The yard is a standing spar supported by a network of halyards. The sail and its topsails are brailed up to the mast, and when

IN A BURMAH CREEK

set are hauled out along the yard from the deck. A crowd of these craft running before the fresh south wind up the broad Irrawadi form a fine sight in its way.

The most beautiful work in these boats is about the stern and the steersman's seat, upon which the Burman loves to bestow his most elaborate and careful wood-carving. Here the classical scholar may recognise his old friend the ancient κυβερνήτης sitting in state raised aloft beneath his ἄφλαστον ; and he may study almost the identical method in which Greek heroes and Roman merchantmen used to sling their oar-blade rudders on the quarter, following the

[1] *Vide* Holmes's *Ancient and Modern Ships*, etc.

Egyptian example, which takes one back to the very earliest days of man's boat-building.[1]

Some up-river forms of boats among the Burmans and Talaings are very pretty and elegant. The fiddle-

ARAB DHOW—RANGOON RIVER

head, 'clipper' or 'schooner' bow shape [2] is a great favourite, although, owing to the shallowness and

[1] The modern method of slinging the rudder upon the stern-post by pintle and gudgeon only dates in Europe from the beginning of the fourteenth century, the ancient πηδάλια or quarter steering-oars having been retained in all Western ships until then. This innovation was a most important advance in shipbuilding, making possible for the first time a large increase in tonnage. The Chinese adopted the stern-post as the place for the rudder probably at a much earlier date, but they have always placed it in a rudder-trunk, somewhat similar to the centre-board case, through which the deep rudder could be hoisted up by means of winches when entering shallow water.

[2] The first record we have, so far as I am aware, of this beautiful form of bow is in the representation of a merchant ship on the painted vase found at Vulci, in Etruria, now in the British Museum, of about 500 B.C., which shows a hull as beautiful in shape as it is seaworthy in design.—*Vide* Torr's *Ancient Ships*.

rounded-up form of the ends of these canoe-built craft, the lower edge of the stem is frequently carried right out of water.

It is not a little remarkable to see lying in the roadstead at Rangoon, among the steamers and local

UP-RIVER BOAT

coasters, some fine specimens of the larger type of Arab dhow from the other side of the Indian Ocean.

Coasters of Lower Burmah

The coasters that trade from Mergui, Tavoy, and Moulmein to Rangoon and Bassein are beamy ketch and schooner rigged vessels of about 80 to 100 tons.

They bring cargoes of Nga Pi (dried fish), junglewood, fruit, etc.

Some of them are bald-headed, but quite a number have topmasts on both masts. They have considerable sheer, with a raked, almost clipper, bow, and round lofty counter-sterns with a comfortable-looking poop deck.

Mainsails and foresails run on hoops along the gaffs, which are kept standing, and controlled by vangs.

The sails are stowed up and down the mast, inhauls and brails being fitted.

They are very like the Malay schooner-rigged craft employed by the Malays on the other side of the Peninsula (*vide* Chapter X). Very often both masts are the same height, and the foresail and mainsail being very much the same size, it is not easy to say whether they should be called schooners or ketches. I have, however, heard them referred to as ' skoffnar ' by native crews on the other side. The foresail in the Lower Burmah craft is usually boomless, while

RANGOON COASTER

the mainsail always has a boom which projects some way over the stern. The spars are very light for the size of the vessel, and the rigging in poor condition. The sails are baggy, as with nearly all the native sails of the Indian Ocean, and in common with other Asiatic seamen they do not attempt a long voyage except in a fair monsoon, and seldom turn to windward even for a short distance unless they have a fair tide.

One may occasionally see quite a fleet of them anchored off Amherst at the mouth of the Moulmein

River waiting for the ebb to run down the coast, as in light winds even some way offshore they cannot make much progress against the tide.

Some of them are schooner-rigged, with a China lug foresail, the foremast in this case being stepped right in the eyes of the boat with a big for'ard rake, and a single jib cut low in the foot on a steeved bowsprit. One or two have auxiliary engines of semi-Diesel type.

During the south-west monsoon, when strong winds and rough seas are the rule, with heavy rain obscuring all landmarks, navigation on this coast is a dangerous business. Hence these coasters are all laid up from June to September or October.

Rangoon Cargo Boats

These vessels are almost identical in type, and do not vary a great deal in size. They are sharp-sterned

RANGOON SAMPAN

and have tremendous freeboard. The rig is uniform, and consists of a square-headed standing lugsail on

the foremast and a tall, narrow, leg-o'-mutton mizen. They are built entirely of teak, including the frames, which are very massive. Zinc sheathing is used on the bottom to protect the wood from worms.

These boats, although clumsy to look at and neither fast nor handy, are well adapted for their purpose.

RANGOON LIGHTER

They are used for taking off timber, coal, rice, etc., to the steamers loading in midstream, and for cargo work up and down the harbour generally.

A downhaul is rigged at the heel of the yard and a vang to the peak. There are no shrouds, and the sheet is a single rope with no purchase. A fore-bowline is used for windward work. The yard is a

lightish spar, and has a wonderful bend in a breeze. The sails are made of light canvas, and are often badly torn and much patched.

With a fair tide these boats work up the harbour against the wind fairly well, in spite of the fact that the sheet is always belayed permanently on one side, so that on every other tack the clew of the sail is hard in on the weather quarter. They trust to the tide to shove them up to windward, being afraid to

ON THE IRRAWADI

start their sheet, as in a breeze the sail would take charge, since no purchase is fitted.

The best time to see these boats is coming up-river at dawn on the first of flood before a fair wind; fifteen or twenty of them together looming up through the early morning haze, with the great brown lugs bellying to a fresh breeze, and a curl of foam at their bows, form a most picturesque sight.[1]

[1] B.B.T.C.L. Cargo Boats, 1928.

	Tons.	L	B	D	Crew.	
No. 150	60/70	64′	16′6″	8′0″	8 coolies and a tindal.	
No. 153	80/100	72′5″	17′7″	9′7″	10	,, ,,
No. 155	30/35	54′	13′10″	6′10″	6	,, ,,

Taking all in all, the Burmans, and other boating races on the Indian Ocean, are neither so competent or so courageous in handling boats, nor so skilful in designing them, as are the races immediately to the west and to the eastwards; and in a limited experience of river boating with Burmese, the writer was more often in actual peril from want of watermanship, in strong currents or rough water, than ever was the case during several years' journeyings among Chinese

OFF MERGUI—REEFED

and Siamese, often under most unfavourable conditions.

An extremely pretty type of small sailing-craft is that used in the Mergui Archipelago. It has often the distinctive form of bow and stern of the Burmese and Talaing boat people, but the general appearance and the rig are very Malay in character. A good many of the larger boats are built up, upon the lower dug-out bottom-piece, in wide strakes, and have pretty clipper stems and overhanging counters, and in the

nineties were extensively used in the pearl fishery which flourished among the islands after the discovery of the Pawe Bank early in the nineties. They form a very lively and characteristic feature of the beautiful little port of Mergui. At low water they may be seen lying in all positions upon the mud, or sailing with the sea-breeze up the customary tracks in the mud-banks to *terra firma*. At high water they come

MERGUI HARBOUR

running in under mainsail, or may be seen beating out with gunwales awash, throwing the water halfway up the foresail. The larger ones have a comfortable little house or shelter aft, just before where the steersman sits. In fact the cabin-top, popular among small yachts in the west, and especially in the United States, has long been in use in the far East, in every variety of form, a fact due to the same cause—namely, shallow draft of hull and consequent want of head-

room below. The rest of the boat is decked, but as is usual with warm-water sailers, is not water-tight.

MERGUI PEARLER

A smaller form is little more than a long dug-out canoe, looking like a snake upon the water, and is

ON THE FISHING-GROUND

used by the fishermen of the islands. It carries the same peculiar square-headed lugsails, with the foremast right in the bows ; and dodging about upon

their fishing-grounds in a lop of a sea, half a hundred of these boats form a really beautiful picture, and a remarkable example of what small craft well handled can do. In case of bad weather all of these boats are of course obliged to cut and run for the lee side of the nearest island. They have too little body to claw off a lee shore in any weather; but with centre or lee-boards fitted to them, a little more ballast, and higher sides, they might give a very good account of

FRESHENING UP

themselves, the hull being without dead wood of any kind, and formed with long clean curves.

The writer's experience of them, though limited to a short cruise of five days' duration, was not dull, the squally time about the beginning of the rains not being ideal cruising weather. The crew were Burmans, not accustomed, as it turned out, to the boat, and ignorant of the fact that the lower strakes had all been opened out by the hot weather. In one of the terrific blows heralding the break of the monsoon, we drove up the Tenasserim estuary in a sinking condition, with the mainsail jammed at the masthead,

and the water pouring in solid, underneath the deck. We could only run; any attempt to bring her to

RUNNING HOME

would have capsized her at once, and handed us over to the crocodiles waiting along the mud-banks.

The mainmast was tough, and the available knives

ON THE MUD

blunted by six weeks' jungle-marching. It was a question of moments, until the mainsail obligingly split up and blew away to leeward, thus enabling

us to get in what remained. The Burman *sarang* declared between his tears that an angel had gone up the mast to clear the sail—an explanation which my Siamese and I were disposed readily to accept.

After getting the water under, we sailed her through the squalls of that windy night with more circumspection and tenderness than I think I have ever felt called upon to display upon any similar enterprise.

But with a well-caulked boat and ordinary weather, sailing among the forest-covered islands of this beautiful archipelago and exploring its wide jungle-lined estuaries with the cheery-natured Burmese for your companions is a perfect form of seafaring which can be strongly recommended to any traveller of grit.

There is plenty of big-game shooting inland towards the main range, and the flora and fauna present a most interesting combination of the peculiarities of India and Malaya.

The Karrens of the hills are cheery and enthusiastic sportsmen, and if the sport often involves hardship and privation as well as danger, it is none the worse for that, and is never lacking in variety and incident.

THE BANKS OF THE HUGLI

A MALAY HARBOUR

[*To face p.* 385

CHAPTER XI[1]

THE MALAY PENINSULA

HAVING regard to the wide reputation which the Malays have earned for themselves as a maritime people in Eastern seas, it is, at first sight, not a little remarkable that, so far as the Malay Peninsula is concerned, they have developed until lately no really able type of sea-going boat. European writers have credited the Malays with building boats, the lines of which are unsurpassed by European types; yet so far as the writer has been able to discover, no specimen answering to such a description is to be met with in the peninsula. The characteristics of build are small displacement, hollow lines, V-shaped sections and sharp floors, shallow draught, lack of beam, and a consequent want of stability and weatherliness. An inquiry into local conditions, however, explains much. Two main factors have been at work influencing the development of boats and tending to produce the results arrived at. In the first place the rivers, which almost invariably constitute the ports of the peninsula, are, with scarcely one exception, protected by very shallow bars of sand or mud, which make it impossible for a deep-

[1] The greater part of this chapter is reprinted, by kind permission of the Society of Arts, from the *Journal* of the Society for May 1902.

bodied boat to obtain shelter within them. These bars are caused by the vast quantities of detritus brought down by the rivers in flood-time, as a result of the very heavy tropical rainfall ; [1] detrital fans of mud are deposited around their mouths, over which the mangroves steadily grope their way out to sea ; the current keeps open a channel, which is of fair depth within but shallow and shifting upon the bar, varying often with the strength and direction of the

A KELANTAN TYPE OF SEA CANOE

wind prevailing outside. In many parts of the Peninsula the onshore monsoon causes wholesale alterations in the banks and channels of these bars, and leaves enormous deposits of sand in the river entrances, through which the fresh water has to cut a new channel to the sea nearly every season. Safely ensconced within these creeks, protected from observation by the mangroves and from pursuit by the shallow bars, the old Malay pirates scarcely

[1] Upwards of one hundred and ten inches per annum in some inland districts.

eighty years ago used to watch the seaboard traffic of the Straits and swarm out upon their chosen prey. When pursued by the boats of the Royal Navy, they would make good their escape by just bumping over a friendly bar where their pursuers could not follow them, and then turning aside up some of the innumerable creeks that intersect the mangrove swamps near the river mouths. Hence came the necessity for shallow draught and small tonnage.

A second factor, scarcely less potent, so far as the west coast of the Peninsula from Penang to

SINGORA FISHING CANOE

Singapore is concerned, has been the variable character of the light breezes prevailing in the Straits of Malacca. The monsoon currents of the neighbouring seas do not blow with any regularity or force owing to the protection afforded by the island of Sumatra on the south-west and the Peninsula on the east; and the usual light winds are varied only by occasional south-westerly squalls of great violence but short duration known as 'Sumatras.' A third factor was the strength of the tides, which, on the Selangor coastline, have a rise and fall of twenty feet or more. The lot of the sailing-vessel in this neighbourhood is

thus precarious; racing tides and baffling winds and calms make progress very slow. Hence mechanical propulsion by oars or paddles was the first necessity of the old-time Malay seaman in the Straits as with the early sailors of the Mediterranean; sails were merely an occasional convenience. The Malay soon found that a long light craft, having plenty of accommodation along its sides for paddlers, was by far the best adapted to the navigation of these waters and, moreover, had the sailing-vessel at its mercy nine times out of ten—a very pleasing feature in the eyes of the Malay at the time when the Straits of Malacca served as the highroad for all the sailing tonnage of the Eastern trade. Moreover, the lack of freeboard suitable for manual propulsion was not a serious danger in a locality where heavy weather is so little known. Hence it came about that the long 'canoe' form of craft established itself as the most suitable type, and that not only, as was natural, for the river navigation of the interior, but also for the estuaries and the more open waters of the Straits. Steam and the growth of the British power in the Straits have combined to make impossible the old buccaneering pursuits dear to the heart of the Malay sailor, and he is now constrained to ship as a fo'c'sle hand in Penang or Singapore steamers, or make sailing voyages up and down the coasts as a commonplace unromantic trader or peaceful fisherman, with few chances of plunder, and even less opportunity for using his kriss.

The foregoing remarks are not, however, entirely applicable to the east coast of the Peninsula, where during the prevalence of the north-east monsoon in the China Sea, strong gales with heavy sea and

violent rain blow havoc upon the unprotected coast-line. At first sight, then, we might have expected to find some powerful sea-keeping boats on this coast, but, in fact, we find practically the same types as on the sheltered waters of the Malacca Straits. The explanation is easy. During the prevalence of the onshore monsoon, the bars at the entrance to the rivers, which form the only ports, are a whirling mass of breaking seas, through which only during rare lulls in the weather can any vessel

SINGAPORE SAMPAN

pass with safety. To such an extent indeed is this the case, that the north-east monsoon is called by the Malays 'Musim Tutop Kuala,' or the 'shut-port (*i.e.* close) season.' From the shelving beaches thrown up by the monsoon it is, of course, impossible to launch a boat. Hence from October or November to February or later, according to the strength of the weather, the whole coast is shut up so far as local navigation is concerned. An occasional high-sided Chinese junk will now and then venture along the coast, but communication in most cases becomes easier across the Peninsula, and the men of Patani

and Singora find it simpler to cross overland to Kedah to reach the west coast than to attempt to get out across the dangerous bars and through the heavy sea raging on the eastern coast.

During the open season the weather is not unlike that in the Straits, bringing light sea and land breezes varied by occasional squalls. Then the Malay fishermen run their long canoes down the beach and put to sea again, and the traders creep out with new mat-sails to resume their coasting voyages.

WITH FAIR MONSOON, FROM A SKETCH IN THE GULF OF SIAM

Owing to lack of ports free from shallow bars large displacement is impossible, and for the fishermen light canoe-like craft are preferred, as they launch easily from the beach and can be paddled at high speeds to come up with fish. Hence deep-bodied boats are again generally absent on this coast, and as the centreboard and leeboard are not known the paddle retains its importance for working to windward. It must be added, however, that for some trades, involving long voyages and calls at deep-water ports, the advantages of big-bodied craft are fully recognised by the Peninsular Malays,

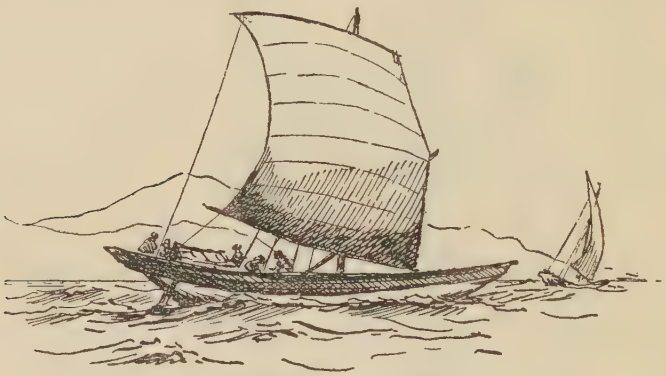
and that between Singapore and Siamese ports, for instance, fine vessels of two hundred tons, built on European lines, are frequently to be met with. They are rather nondescript craft, often with overhanging clipper-stems and a superabundance of deck-houses. The masts are generally very light and crooked-grown spars; the rigging and gear aloft make up in quantity what is lacking in quality.

EAST COAST TRADER

They are generally rigged with two nearly equal-sized masts, and a bowsprit on which from one to three jibs are set. The mainsail and foresail are either Chinese lugs or on the European fore-and-aft plan, the gaff being a standing spar controlled by vangs. The sail is set by hauling out along it and taken in by brails to the mast, and long topmasts with short double-spar crosstrees and jib-headed top-

sails are used. The sails are of light material when they are not, as in the case of regular Chinese or Malay lugs, made of matting, and they seldom set very flat.

The true Malay sail, however, is nothing more than an adaptation of the original and primitive square-cut sail of the early navigators, and this sail is used still in the majority of the Malay fishing-craft and small traders, matting being the material preferred. It is used in its most typical form by the primitive



ORANG LAUT BOAT, JUNKSEYLON

Orang Laut on the west coast, north of latitude seven. These primitive folk have practically no homes but the *kadjang* coverings of their boats, which they moor in snug anchorages among the islands. The *penjajaps*, the traders of the more civilised Malays on the east coast, also use this sail. A boom along the foot is almost as necessary as a yard along the head. The Malays, by the simple expedient of tilting the sail forward so as to bring the tack right to the deck, have long converted this square-cut sail into what is practically a lugsail, the most power-

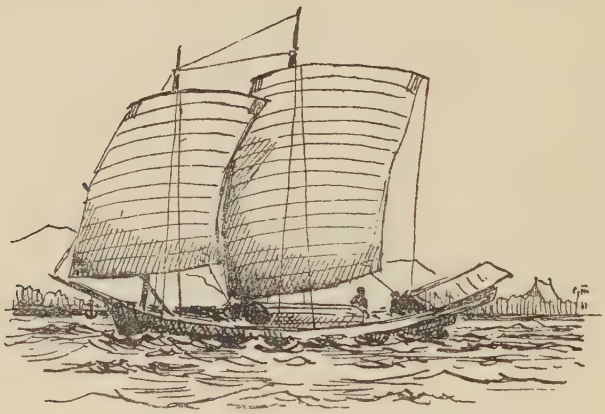
ful of lifting sails on a wind. The dipping lug is set taut along the luff by a spar bowline fitting in a cringle, the lower end of which comes to the deck abaft the mast, as was the custom in the old Scotch *skaffies*. The yard being too light to stand alone by the wind, is invariably controlled by a vang. The unhandiness of the dipping lug in tacking is felt to the full with this sail owing to the stiffness and weight given to it by the material of which it is

AT ANCHOR, FROM A SKETCH OFF LAKAWN

made and the boom along the foot, and the operation of lowering and shifting sail is such a long one that the anchor is often thrown over while the manœuvre is gone through with the two big sails of the *penjajap*.

The devotion of the Malays to top-hamper in the shape of raised deck-houses and outrigged superstructures over the bow and stern is shared with many other Eastern races, and is, no doubt, largely owing to the lack of body in their craft. In boats

with sharp bottoms and fine lines the cargo, whether of fish or merchandise, has often to lie high, and consequently all the accommodation for the crew is high up, and every foot of extra space which can be built on in this manner is so much added to their comfort and to convenience in working the vessel. The galleries built out over the bows of the larger craft, both of Malays and Chinese, are used for working and storing the anchors, just as was the case in the vessels of the classical and mediæval seamen who



MALAY 'PENJAJAP,' SINGORA HARBOUR

used the fore-galleries for the storage of their anchors; and in boats which are often so lean about the quarters, the little stern galleries and rails add greatly to the comfort and safety of the steersman and of men handling the mainsail.

Even in the smallest canoes, which most of us would think crank under any circumstances, there is generally in the East a grating (or lattice) forming a raised floor, within an inch or two of the top of the gunwale, upon which the crew is accommodated.

It can certainly not be claimed that such an arrangement conduces to stability; yet such good watermen are these warm-water sailors, and the Malays in particular, that even long coasting voyages are undertaken in such craft without any apparent anxiety as to the result.

The *penjajap* on the east coast is often a rather unsuccessful imitation of European build, with transom-stern half concealed by the overhanging stern galleries. There is generally plenty of show; but

MALAY 'PENJAJAP' GOOSEWINGED

the boat is very wall-sided, with insufficient beam, which facts combine to spoil her appearance on a close inspection, although she looks smart enough a little distance off. The writer has seen these boats nearly on their beam-ends when caught by a heavy squall at anchor, though with nothing but their slender masts aloft, a fact largely caused by the want of under-water body in the hull, and the amount of top-hamper by way of accommodation on deck. A bundle of bamboos along under each gunwale frequently adds some much-needed stability of the

kind supplied by the outrigger, and provides a store from which to renew broken spars. Yet crank as these craft seem, the Malays manage to make their way for long distances in them with very few accidents. No fact could form more conclusive evidence of their pluck and skill.

The Malay, like a true seaman, takes a great pride in his vessel, and if his ideas of ornamental decoration do not always accord with those of the West,

RUNNING INTO SINGORA—TRANSOM-STERNED PENJAJAP

he has, at all events, never been guilty of producing such scarecrows of the seas as many of the tramp steamers at this moment lying in the port of London, and with regret, be it whispered, many of the most modern motor vessels. In rigging, as already hinted, he is partial to slender, lofty masts, and if his vessel is large enough, he indulges in two masts of nearly equal height, to which is generally given a very smart rake forward. Under Chinese sails, the advan-

tages of which over the dipping lug have been recognised by many on the east coast, the Malay may be distinguished from the Chinaman at sea, when yet hull down, by the equal size of the big sails, and the invariable absence of any mizen. The hull is also low and long, with no many-storied castle aft, but merely a *kadjang*, or thatch awning, over the raised, overhanging poop, or a simple *dandan*, or gallery. There is something of the yachtsman in the Malay, and he is much addicted to graceful little

MALAY, EAST COAST

vanities about the stem-head and stern-post of his small boats; and so greatly does he hold the figure-head in estimation, that a class of boat is often named after the form given to the stem-head. European influence may now be seen at work, to a greater or less degree, in almost every class of rig in the ports of the Peninsula; but the Malay, more than any other Oriental, has adopted the jib, or three-corner staysail. This essentially modern product of Western Europe he uses not only in the large traders already referred to, but also in the *kolek*, or 'sea-canoe'

of Singapore, in which also the old Malay lug has been altogether discarded, especially for racing purposes, in favour of the spritsail. The staysail is recognised as the most convenient form of headsail to prevent excessive gripping, and does not involve the disadvantages of the weight of a mast right in the eyes of the boat.

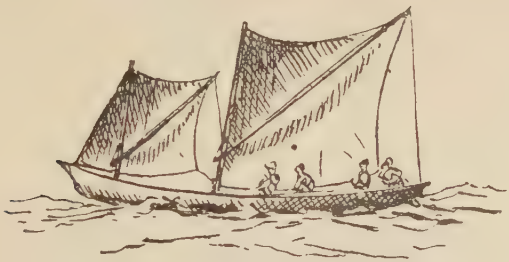
It will thus be seen that, from a variety of causes,

'KOLEK,' SINGAPORE STRAIT

with which the physical geography and the meteorology of the Peninsula have much to do, the canoe shape, the canoe idea, predominates in most of the boats of the Malay Peninsula. It may, in fact, be said that the maritime enterprise of its inhabitants obviously commenced with the canoe and continued with the canoe, and that its highest form of development has resulted in a craft of larger dimensions,

which yet in all essential particulars still remains—a canoe.

The nomenclature employed by the Malays for their boats appears to the traveller at first to be unnecessarily intricate. Closer attention, however, soon shows that the name, as has indeed been already suggested, is very rarely derived from the rig, as is so much the case in Europe, but rather from distinctions, which often seem to the stranger to be comparatively insignificant, in the hulls or build, just as is the case with many of the dhow types of craft further west. Nearly every waterside settle-



SINGAPORE FISHING CANOE

ment of any importance having developed its own ideas of ornamentation or of construction, it is not to be wondered at that boats which might well be classed under one head, as far as all essential particulars are concerned, yet come under the observation of the traveller under widely different names, differing often merely with the locality of their origin. For instance, a number of otherwise very similar boats are named (*a*) simply after the form of figurehead, to the frequency of which reference has already been made, *e.g.* the hornbill boat,[1] the crocodile

[1] 'Prahu Enggang.'

boat ; [1] or (*b*) from some peculiarity in construction, *e.g.* the Patani ' half-decked ' [2] boat (literally, boat with decked fore-part), or the ' civet-fence ' [3] boat, which is nothing but a form of the type generally known as *penjajap*, to which a peculiarly ornamental bulwark or rail is given.

A large number of boats, as might be expected, are distinguished by the use for which they are

MALAY TYPE, SINGORA

built, *e.g.* the ' boat for going up-stream,' [4] and various types of fishing-boat ; [5] others are of purely local significance, *e.g.* ' banting ' (an Achinese type), while several appear to be derived from European names, *e.g.* ' skonar ' (schooner), and ' pinis ' (pinnace), and perhaps ' kichi ' (ketch), ' skuchi ' (scotchy), and ' katar ' (cutter).

[1] ' Prahu Buaya.' [2] ' Katop Luan.'
[3] ' Pagar Tenggalong.'
[4] ' Prahu Pemudik ' ; from ' mudik,' to go up-stream.
[5] ' Prahu ikan,' or ' per-ikan ' ; from ' ikan,' fish.

It is noticeable that, in most of their larger boats, the Malays have adopted the comparatively modern method of slinging the rudder by metal fastenings on the stern-post, known afloat as 'gudgeons' and 'pintles.'

In many of their dug-out canoes, in the *kolek* and some of the non-European types of fishing-boats [1] of Selangor and the east coast, for instance, the rudder consists of the simple paddle held on the quarter, or a paddle-shaped rudder slung at the head on a stout upright, and held at the neck by a rattan lashing. This, as already pointed out, is the earliest and simplest form of rudder known to man. It was that used, as noted elsewhere, in the ships of the earliest navigators of the Mediterranean of whom we have record,[2] and it remained, with slight modifications, as the usual steering contrivance of the Egyptians, of the Greeks and Romans, and of the Danes and Saxons and Normans, down to mediæval times. It is much used in some of the craft of the northern portion of the Gulf of Siam, and it may be noted that this form of rudder is always used on the lee quarter, if, as is usual, the boat carries a weather helm, this position giving far greater power and deeper immersion.

The Malays do not use oars to a great extent, except with the bigger-decked vessels. These oars are somewhat heavy about the loom, and have often sharp-pointed blades, shaped rather like a broad angular spear-head. They are generally worked in a rattan grommet to a sharp, quick stroke, any

[1] *e.g.* the Kakap Jeram.

[2] *e.g.* the records of craft in Egypt so steered from the time of the third dynasty (about 6000 B.C.), mentioned above.

other kind of stroke being impossible owing to the friction in the grommet and the shortness of the oar. The 'standing up and pushing' ('salmon-stroke' or 'sculling') position, common with the Siamese and Chinese and in the Mediterranean, is, on the whole, rarely adopted by the Malays. In the smaller craft, with low freeboard, the paddle is used, the blades in some localities having the same angular spear-shape.

Boat-building

The Malays usually follow the general Indo-Chinese method of construction in the first stages, at all events, of their smaller boats.

A selected tree is laboriously hollowed out by the adze until the sides are sufficiently thinned to open out under pressure and the judicious application of heat by a slow-burning ember fire beneath the bottom. The fore and aft ends are roughly modelled with the adze. Before proceeding further, the hull is at this stage frequently soaked for some days in the water. In many parts of Siam and Burmah the presence of a monastery can be almost certainly predicted by the little fleet of hewn modelled hulls lying sunk beside a landing-place, a sure sign of the boat-building propensities of the brethren of the yellow robe close by. When sufficiently soaked, the opening-out process begins.

Various methods are used for the purpose of opening out the dug-out. In some cases water is placed inside the dug-out hull, and hot embers are placed upon the ground underneath it, and kept at the required temperature until the sides have opened out sufficiently to take ribs, knees, and cross-pieces.

The sides, in falling out, come down to the level of bow and stern, and your up-river canoe is now complete.

Another method of opening the dug-out hull is often used. To the perpendiculars on each side cross-pieces are securely lashed under the hull. A similar number of cross-pieces are placed above the hull, over the lower ones, and connected by a strong double rattan rope. Through these rattans hard-wood levers or handles are placed to give a purchase, and are then twisted round and round, bringing the ends of the cross-pieces together. This pressure is kept constant while water and hot embers are applied, as necessary.

Two dug-outs may sometimes be seen being cut from one log; the inner and smaller one is worked out by the driving of stout wedges. In order to facilitate the heavy work of driving home these wedges, a low scaffolding is erected alongside one of the canoes for the wedger to stand upon, and the log itself is turned over till it lies at a convenient angle, by means of a lever placed underneath it, the end of the lever being raised by a rope made fast to a windlass. Sometimes a simple floor or keel-piece is used, on which the boat is subsequently built up. In this case stem and stern pieces will be worked in. The sides are rabbeted into the floor-piece, and the upper strakes built on as in an ordinary carvel-built boat. The simple dug-out form having been obtained, the upper strakes can be built on, the ribs being carried up to receive them. For this purpose the planks are bent by various ingenious applications of levers and hot embers. Many clever devices are used by the Malays for getting the neces-

sary power, and the boat-builder has many arrangements of stout upright pegs about his shop or in his compound, set to all possible curves and angles which he is wont to use.

In the inland sea of Singora many dug-outs may be seen, built up with strake on strake, in the most unblushing way, without any attempt to hide the roughest method of boat-building perhaps to be seen anywhere. No attempt is made to work in

LAKE BOAT, SINGORA

stem and stern-posts. The ends are blocked across a foot or two inside the end of the boat's nose or tail, if one may use the expression, thus forming thwartship water-tight bulkheads. The two or three strakes, often variously coloured, are built on, and the topmost one is utilised to give a finish to the whole, by being extended and turned up forward, and carried out to form a steersman's staging some way aft. The almost submerged noses of these boats, which are really more Siamese than Malay

in type, have generally a most pathetic expression of protest. It reminded my imaginative Siamese of the wistful look on the face of a puppy when thrown into the water for the first time. They draw very little water, and are used all over the lake, being able to navigate the shallows which now form so large a portion of it. They are usually rigged, not with the Malay lug, but the Siamese high-pointed standing lug, a far handier and handsomer sail. For these the very light yellow matting is used which is almost universal in the upper portion of the Gulf of Siam.

There is a further method of warping planks by aid of a fire, by which, when the planks are ready to go on as upper strakes, they are fixed in position, and built up upon the dug-out keel and floor portion of the boat, which has already been opened out to the required extent. These strakes, as they are put on, are held in position by a system of bamboo ties, and secured by rattan lashings.

The last stages of the Malay boat differ with the district. In many cases a beautiful finish is given to the fittings, and a shining polish to the under-water portion of the hull. At this stage half the village may be found at the boat-builder's, polishing or criticising with much energy and enthusiasm.

Peninsular Types

Among the more noticeable types of boat may be mentioned the *Kakap Jeram*. This is a typical Malay fishing-boat of the Selangor coast. Kakap means 'spy' or 'scout,' or 'look-out,' and Jeram is the name of a big fishing-village in the Kuala

Selangor district (of Selangor), from which this boat took its name of the Jeram scouter. The rig is practically the same as that of the *nadir*. The sketch shows the figurehead and ornamented stern-post, and the long paddle rudder already described. The gratings on which the crew are accommodated are shown, and along each side forming the gunwale may be seen a wash-strake formed of strong lacing of split bamboo strips, stoutly sewn together with

'KAKAP JERAM,' SELANGOR

bamboo withies, and filled in with palm-leaf, the whole held in position by lashings to knees brought up from the boat's ribs. This is a very usual form of wash-strake in Malay boats and is much used by the Orang Laut, or sea-dwelling Malays of the west coast. It is strong, light, and effective. It is given considerable flare at each quarter. The equivalent of the lumber irons used in European fishing-craft is provided by loops of rattan on the starboard side, and here the punt-poles and other spars are stowed. Forward will be noticed a peculiar

form of bits, stretching athwartships, used for winding the cable upon, as well as bitting it;[1] it is used by the Siamese as well as by the Malays.

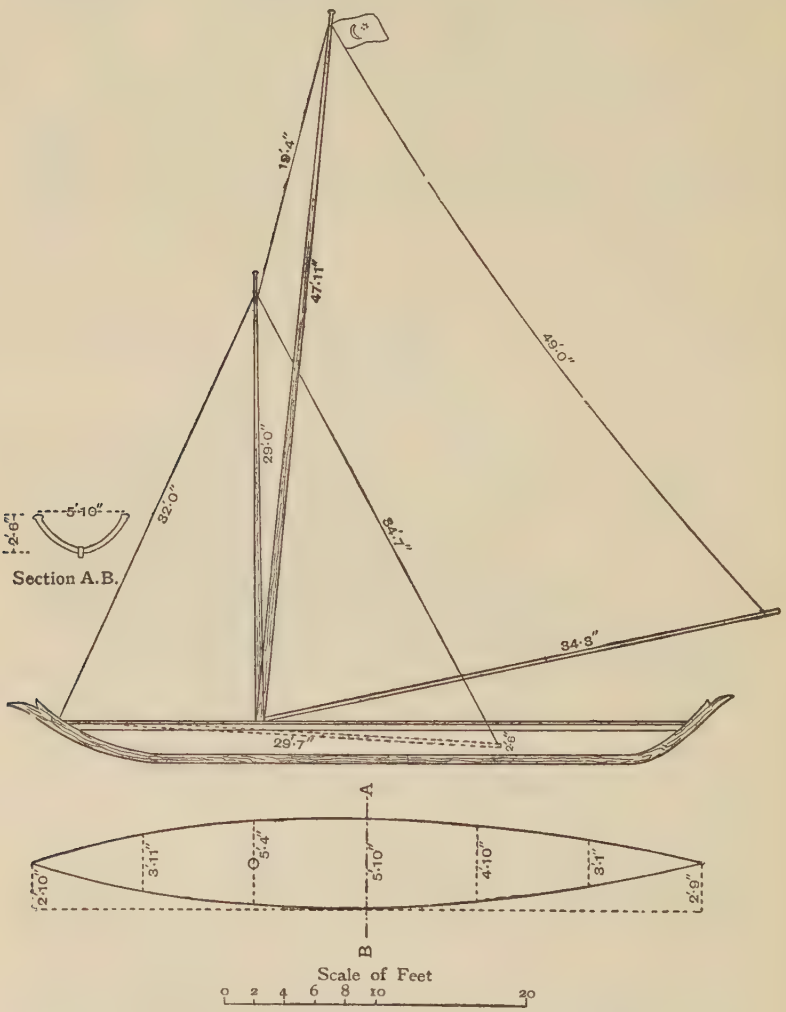
The *kolek*[2]—literally the 'rocker' or wobbler, from its crank build—is a very common form of small canoe. The term *sampan*, a word of apparently Chinese origin, which is given generally to any small, especially Chinese, boat, is also frequently applied to these canoes. The *kolek* is the usual form of small sea-fishing canoe; the stem and stern-posts are generally high and pointed, with some decorative paint-work or other ornamentation. It is generally carvel-built, with a shapely hull and prettily rounded forefoot; but there is very little bilge, and consequently small stability, which, combined with the low canoe-like freeboard, makes these boats somewhat tricky to the novice. The peculiar 'crabs' eyes' are frequently to be seen in these boats. They carry single or double lugsails, according to length. In the former case, the tack of the sail is usually belayed at the mast, so as to form a standing sail. In these little boats the young Malays generally get their first lessons in sailing. In the longer boats, with larger crews, two dipping lugs of the usual Malay type are generally preferred.[3] Some of these boats are said by the Malays to carry the 'sabang' sail. Klinkert describes this as 'the sail of a small boat which has no tackle except a brace, but has

[1] Dimensions: 13 feet by 7 feet by 3 feet; 1 foot freeboard; capacity, 2 koy; crew of 3; length of mast, 23 feet; material, meranti.

[2] Klinkert says: 'The small variety for one person only; but big ones hold ten or more persons.'

[3] Dimensions of five-man boat: Length, 24 feet; beam, 4 feet; depth, 2 feet; freeboard, 1 foot; capacity, 20 pik; length of mast, 24 feet.

instead a kind of "sokong" (= prop).' This presumably means a spritsail, set up by its spreet



MALAY 'KOLEK' OR SEA-CANOE—SINGAPORE RACING TYPE
(*By kind permission of the Editor of the 'Yachtsman'*)

—no other sail so exactly answering to this description. In Singapore the *koleks* have developed into

long boats used a good deal in racing, rigged with large cloth-made spreet mainsail and stay foresail, and manned by a large crew of twenty or more, who act as live ballast out to windward. In a fresh breeze they stand on the gunwale, and, holding on to man-ropes leading from the mast, lean out all their length to windward. These boats are very slippy with the wind abaft the beam, for, with a length of 45 feet, they have a beam of not more than 5 feet 6 inches, and a draught of about 2 feet.

45-FOOT RACING 'KOLEK,' SINGAPORE

But they have no grip for weatherly work. The increase of the lateral resistance by the introduction of a centre-board would probably result in enabling these boats to perform well on a wind in smooth water.

The *Lancha* or *Lanchang* is an approach to a sea-keeping type of vessel. She is rigged with the ordinary square-headed dipping lugsails, which are of nearly equal size as in the *penjajap*. The lofty slender masts are well stayed, and are stepped in tabernacles

of a kind which is common to the Malays, and both are raked forward. The sails are made of the screw-palm with cloth tops, and there are main and peak halyards.

The vessel has a clipper stem, over which the fore-gallery is built for the anchors; this also acts as a bumkin or bowsprit for spreading the tack of the foresail. A comparatively commodious deck cabin and stern gallery are added over the straight stern-post. The hull is carvel-built on very European lines, but has no great depth.

In Selangor it is affirmed that the Lanchang is a type of boat which was frequently owned by Malay Rajas on the Sumatran coast, and to this day in Selangor it is this royal vessel which is dedicated to the service of the spirits when the medicine-man invites them to sail away.

The *Lanchang To'Aru* (Bandar) is very similar to the other Lanchang in hull, but is fore-and-aft rigged with long topmasts and other peculiarities mentioned above. To'Aru was one of the council of four great chiefs of Selangor who in former days had much power, to whom the election of the Sultan was intrusted. He was the most powerful of the four, and took his name from a district called Aru [1] in Sumatra, from which he came over to settle in Selangor. Bandar was the site of his home on the Langat River. He appears to have been a go-ahead

[1] *Aru* is probably the same as the word *Aru* (also *eru*, or *'ru*) which is the name given to the Casuarina. The Siamese on the east explain the presence of this northern-looking tree, which grows in beautiful fringing groves along the sandy coasts of the Peninsula, by the legend that it was brought by the drift of the north-east monsoon, which impinges full upon the coastline, across the China Sea from Japan. It is a tree of good omen, for it grows on non-malarious spots swept by the clean sea wind.

seaman and to have realised the advantages of the European fore-and-aft two-masted rig even for vessels of strictly Malay build.

The *Nadir* is a shallow-draught fishing-boat of the Malacca coast, carvel-built, and with straight stem and stern-posts of European type.[1] The rig is a single lug, the tack or fore-end of the boom being made fast well forward of the mast on the weather bow. The luff is set taut by a spar bowline fitted in a cringle, the after-end coming to the deck abaft the mast. There is a peak as well as a main halyard, both in single parts; the sheet and vang are in one piece, and lead to the helmsman aft. There are spear-bladed paddles, and the *kadjang*, or attap-thatch shelter, used by the crew when riding to an anchor, is stowed rolled up on the gratings. The sail is reefed as in the Siamese Rua Pet by rolling round the main boom to the height required by help of a wooden pin at the fore-end which is used as a lever. A rope parrel, as is usual in these sails, keeps the yard to the mast. Such a boat would be enormously improved by centre or lee boards.

The *Prahu Pelet* (*qu.* Eng. pilot) is a thorough-going Malay as regards hull, with a low-cut imitation of a European gig's dipping lug, with the addition of the usual Malay boom and the vang to the yard. These vangs are always necessary owing to the sails not being of sufficiently stout material to carry a stout luff-rope, by which the sail can be set up taut to stand on a wind, as is done in Europe.

The *Tongkang Malayu* is the Malay lighter of

[1] Material: Kelidang; dimensions, 24 feet by 6 feet by 3 feet 3 inches; 1 foot freeboard; capacity, 1 koy; crew of 5; length of mast, 30 feet; screw pine-leaf sail.

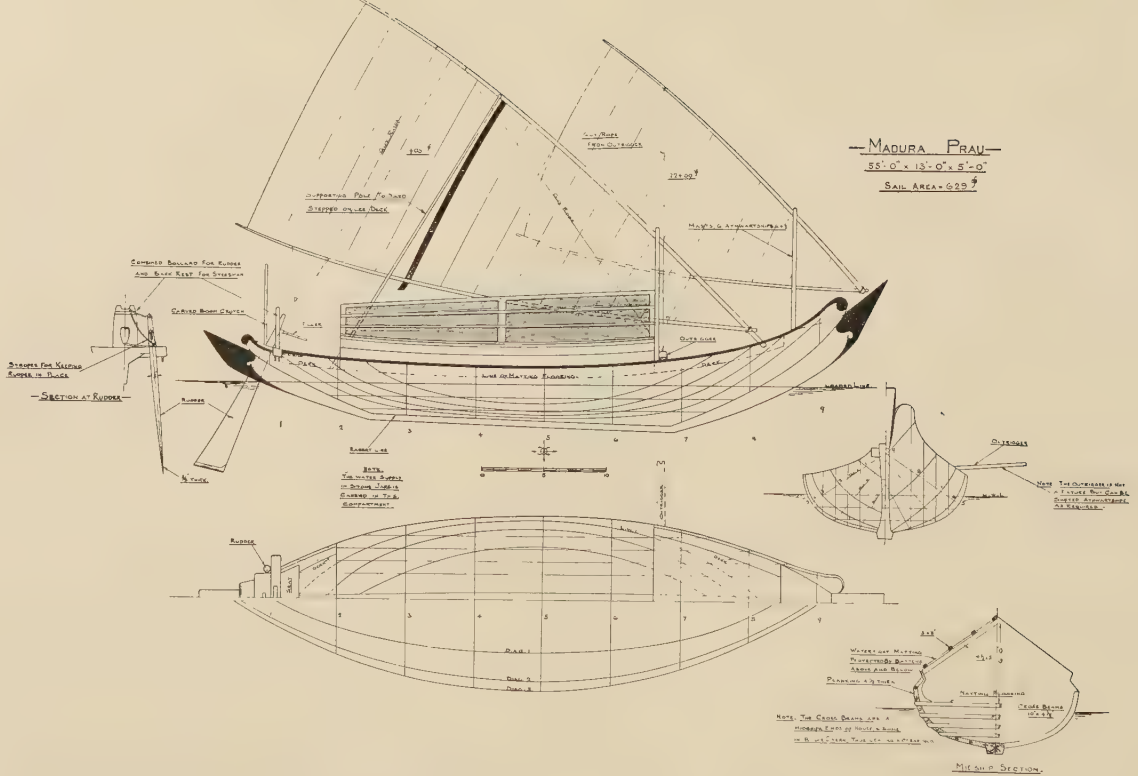
Singapore. This ketch rig is now much used in the cargo lighters of Singapore, and is a handy one for a small crew working about a crowded anchorage liable to sharp squalls. Mainsail and mizen are set by an outhaul along the gaff, and are easily and rapidly taken in by being brailed to the mast. Many of these boats may be seen any day working in Singapore roads. There is also a class of lighter in Singapore rigged with a big flat-headed lugsail, somewhat like similar lighters at Rangoon. They are big, powerful boats, well suited to their work.

RANGOON CARGO LIGHTER

The rig is handy for going alongside ships, as involving very little gear, but here again the China lug is often used.

Singapore forms the western gateway to the most wonderful group of islands in the world—that of the Malay Archipelago,—with the lofty and fertile land masses of Java, Sumatra, and Borneo in the shallow Java Sea ; [1] the innumerable islets of the deeper

[1] For one of the best accounts of the Archipelago the reader is referred to Alfred Russell Wallace's famous book. London: Macmillan. 1893.



LINES, BODY PLAN AND SAIL PLAN OF MADURA PRAU, TAKEN OFF BY WILLIAM MAXWELL BLAKE

By kind permission of 'Yachting'

To face p. 413

basin of the 'star-fish island' of Celebes and of the Banda Sea; culminating eastward in the Moluccas and New Guinea, with its forests and towering heights. Here are the mountains, the jungles, and the seas of the Malay race which has come so extensively under the overlordship of our ancient rivals at sea — the Dutch. Here the typical Malay-canoe build of craft is the rule among the intrepid sea rovers, the Sea Dyaks, and other island races. Many very interesting and

SINGAPORE TONGKANG

diverse types are to be seen. In general they have long ends, sharp sections, high poops, double rudders (as elsewhere described), and mat sails with rattan standing rigging, and sometimes a spar forestay, palm-thatched *kadjangs*, split-bamboo decks, coir ropes and hawsers, hardwood rudder-heads and fittings, and cunning ports and anchor winches. Mr William Maxwell Blake of Singapore has published some very interesting lines and drawings of

some of these prahus in 'Yachting'[1] during the past year, secured during the trading visits which some of them make annually to Singapore.

The writer has no practical experience of these craft beyond having seen a few coming into Singapore Harbour in the fair monsoon. They are none of them weatherly craft, and from time immemorial have depended on the fair monsoon for their long voyages,

JAVA SEA PRAHU

going eastward in the south-west or west season, and coming west with the north-east monsoon from the China Sea. Quite a number have adopted the European form of head-sail and mizen, and the gaff and boom sail has crept in with the Macassa schooners, and has been adopted in many of the prahus. It is usually hauled out on a standing gaff

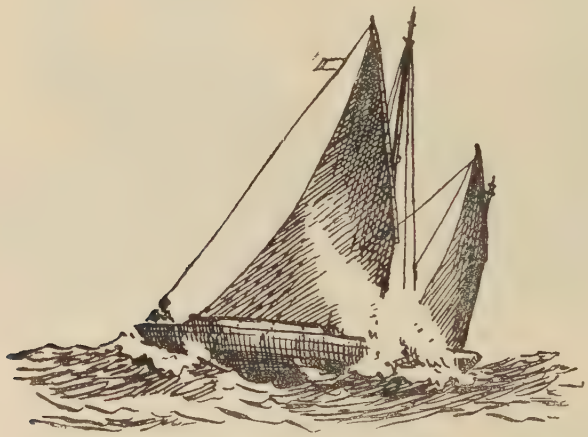
[1] Published at 205 East 42nd Street, New York City.

controlled by vangs, as in the sketches on pp. 391 and 393 of east coast craft. Sometimes, to one's surprise, one finds a staysail or topsail exceedingly well made with rounded foot and diagonal cutting. The general poverty of the coastal inhabitants of these regions and their remoteness will tend to the retention of sail as the chief method of propulsion for many years to come.

CHAPTER XII

THE GULF OF SIAM

Sounds not seldom bring linked with them strange memories. Sitting in a London hansom with a fast trotter between the shafts, an old Siamese air called



BEATING IN FOR SHELTER

the 'Trotting pony' used to come back to me with its quick rhythm and sweet, weird monotony. Alas, now, even the hansom has trotted into the past—except in Adderley Street, Cape Town, where the old Malays still wait for you with 'Pride of the Port' or 'Happy Memories,' and drive you with jingling bells down to the quayside.

FLOOD-TIDE ON THE ME NAM

To face p. 416

That tune still brings old loved pictures of white sands, blue sea, and green islets; I hear the swaying palm-tops chattering in the breeze, and the tall yellow matted mainsails of the boats rustling as they come head to wind to their anchors. Before my eyes again the white crests hurry off-shore to the open sea, and in my ears the monsoon wind roars down across the bending forests from the purple mountains inland.

The sun, up some three hours from his bed, burns fiercely; he licks the water from the shining hulls of the group of trading luggers, and leaves them caked in the salt they threw about themselves when beating in from the stormy offing.

And in the squealing tones of a two-stringed fiddle, somewhere among the fishing-huts behind the beach, the merry jig tune goes ever on; and the boats' crews squatting out on deck, drying their few garments, and cooking their morning rice, form an appreciative audience.

Among these boats are several distinct types of great interest, second to no craft of Eastern waters in strength of build, in sea-going qualities, or in appearance.

Perhaps the most typical craft of the Gulf of Siam is that known as *Rua Pet* (duck-boat, so called, it is said, from the similarity of its under-water body to that of a duck). This boat is remarkable for its high overhanging spoon-shaped bow and its very graceful standing lug mainsail, which combine at a distance to give her quite a European appearance. The foresail, however, is not of the staysail type, but is a little standing lug set on a small light mast right up in the eyes of the boat. There is no standing

rigging to this mast, and it does not add materially to the weight forward; a halyard, sheet, and vangs which lead to cleats on the main rigging are the only ropes. The mainmast, however, is a stout spar stepped a little forward of the midship section, and raked well aft. It has a pair of rattan-stays on each side leading to the masthead. There are generally two sheaves aloft for the main and peak halyards,

'RUA PET'—BEATING

and a rattan traveller holds the long-yard to the mast. A downhaul at the fore end of the yard is generally twisted round and round the mast, thus keeping in the heel at the required angle, and taking the thrust of the lower end of the yard off the luff-rope, which, as usual in native sails, is not stout enough to take a great strain.

The shape of hull is unique, and betrays the fact that the boat is a sailing-boat *par excellence*, designed

for navigating in rough waters. It is thus in direct contrast to the canoe form of the Malay craft, which were in the first place paddling or rowing boats in which sails came rather as an after-thought. The *Rua Pet* is essentially a deep-hulled sailing-boat. Her broad flaring bows rise high, and are shaped to the overhang form which has been, in the last

'RUA PET' HAULED UP

thirty years, so generally adopted for racing-craft of all sizes in European waters. The stern is sharp-pointed; the rudder is shipped on the stern-post, which curves away down to the keel at a considerable angle. The bottom of the boat is rockered, and she is so trimmed that the greatest draught of water is well abaft the midship section, the boat thus

turning very smartly. Whichever way it is looked at, the hull presents beautiful curves to the eye; there is not a straight line about it. The result is just such a form as the sea loves, and uses kindly in its wildest moods.

The buoyancy and sea-worthiness of these boats is remarkable, and as long as they are kept with their high bow to the sea they can weather anything.

'RUA PET,' EASTERN SHORES

Aft, especially when loaded, the freeboard is often rather low.

The best of these boats are generally built at the various small ports along the eastern side of the Gulf, such as Bang Pra, Rayawng, etc., and the wood used in their construction is that of the wonderful forest tree known to the Siamese as *Ton Takien* (Burm. *Thingan*), which is found in all the forests of Indo-China growing to an enormous size, and

in worm-defying power is comparable with teak. It is a heavy wood, and therefore expensive and difficult to bring out of the forest. Wood pegs are used throughout the construction, and the planking is finished flush with the stem and stern posts, as in the Yorkshire coble, and not rabbeted into them.

'RUA PET,' GOING FREE

In common with not a few other Siamese native craft, the Rua Pet is built with flat stem and stern posts, having at the gunwale a width of nearly a foot and tapering downwards to below the water-line. This method of construction seems to have been a result of Chinese influences, coming by way of Anam. In many forms of Chinese sampans, and other small boats, the flat stem and stern post broadening above the water-line to the gunwale is

common; and in Anam a boat similar apparently in nearly every particular to the Siamese Rua Pet is known as *gaydiang*.

If Anam be the birthplace of this type, its admirable sea-going qualities will be explained; for no worse sea can be met with than that running along that coast in the north-east monsoon; and the Anamese, who are considered by their neighbours,

AT SEA

not without reason, to be lacking in most good qualities, must have at least one to their credit.

The boats are ballasted with stones, over which a flooring is placed for the accommodation of cargo and crew. A slight decking, which, as is usual among native craft, is not water-tight, is built across the boat from the stem to the mainmast. Abaft this, a coach roof of dried palm-leaves and bamboo laths

is built from gunwale to gunwale to within six or eight feet of the stern-post. This cover is varnished over and is perfectly water-tight, and underneath is the hold and cabin, roomy and comfortable, though ill-ventilated and hot in a noonday calm. In lightness and strength it surpasses the average small-yacht coach-roof of Europe.

The space at the stern has a floor or grating for the helmsman and crew, and under this the water-jars are usually stowed for the voyage.

AT SEA, SOUTH-WEST MONSOON

A pair of sweeps are carried, and are used in the ordinary standing-up position common in the Far East. A couple of anchors, composite wood and iron grapnels weighted with stones, are stowed forward. When paid out the cable is nipped in a very clever way by a small crooked wooden lever, the end of which is pulled over and held by a rattan grommet slipped over it.

The sails are made of rectangular pieces of yellow palm matting, and are very light.

They necessarily have a boom laced along the foot

like all native sails made of this material, and a vang assists to trim the yard. The sails are always furled aloft along the yard, by rolling the foot of the sail up on the boom, and at the same time hauling it out forward. The heel of the boom is then secured to the foremast, and a line frapped round the sail keeps all snug. The effect is very much that of a furled lateen, and is graceful to the eye.

Reefing is also done by lowering the yard and rolling up the boom to the required height. The man doing this uses a short wooden handle thrust through a grommet in the fore end of the boom as a lever, and when lashed in position to the mast this prevents the sail unrolling. So even our latest patent roller reefing-gear is no new thing.

When riding at anchor, in heavy weather, the main-yard is often lowered on deck ; but it is a huge unwieldy spar and takes nearly the whole length of the boat. In port, the sail is always smartly unbent, rolled up in a big ball, and stowed away below.

The sails are reckoned to last a twelvemonth, but in their latter days are generally very ragged and full of holes. The Siamese boatman, however, does not object to this greatly, as it saves reefing ; in fact, these matted sails are preferred to cotton or duck, for the very reason that the latter are considered to press a boat down more, while the mat sail, unlike the heavier matted sail of the Malays and of many Chinese junks, provides an automatic relief to the boat in a fresh wind, by allowing a large proportion of its strength to pass right through it. At the same time, in light winds this kind of sail seems to hold the lightest air. I have watched one of these sails being bent to the yard and hoisted up,

looking through which one could see the sea and sky on the other side so distinctly that one felt quite incredulous at its ever being able to take one safely to a destination between two and three hundred miles away. Yet we made our passage, our average run in all conditions of wind and weather being a hundred miles a day. Our worst experience was

COAST JUNK, RIVER ME NAM

from a sharp 'nor'-wester' at the head of the Gulf; we kept the whole foresail set, but the mainsail was reefed until the yard was halfway down from the sheave-hole. Thus trimmed she carried an easy helm, and sailed very fast and dry; but the light mat sails could not stand flat enough in the wind prevailing to enable the boat to look up very close.

With a strong wind on the quarter, mainsheet well off and vang kept fairly taut, the mainsail has an astonishing lifting effect as if a big balloon had got hold of the ship. The only thing like it that I know is the lateen sail when the sheet is carried out forward and tack eased off. The wind gets under the sail and seems to lift the whole boat fairly out of water. The helm is then very light, and a whole day with the tiller under your elbow, even in a big

A SNUG ANCHORAGE, SHELTER BAY

quartering sea, is quite easy work and most exhilarating.

The foresail in these boats is seldom trimmed or reefed, and is merely a steering sail; as soon as the wind freshens so much as to increase greatly the boat's weather helm, the mainsail is reefed.

There are no labour-saving devices whatever, and it takes the whole strength of the crew of two or three men to swig up the mainyard or get in the sheet, the boat being necessarily luffed to the wind for either purpose.

In size these boats vary considerably. The smaller ones, locally built and used for fishing, are often not more than 20 feet long; but trading boats run much larger.

The dimensions of a large boat of this type building at Bang Pra were:—

Length over all, . .	50 feet.
Beam, ...	15 feet.
Depth outside, . . .	7 feet 6 inches.

COASTER IN A SQUALL

She was to cost nineteen *catties*, or roughly £95, when finished, and her hull would not require any general overhaul for at least thirty years. The pegs used in construction were all of hard redwood, the planking was of 1½ inch *thingan*, and very accurately shaped.

When on a propitious day the mainmast was stepped, and the main rigging, consisting of jungle rattans, finally set up, the necessary offerings were made to the various spirits concerned with the boat's

welfare, and she was considered to have commenced life.

The average size and price of these boats is somewhat lower than that given above. At Rayawng, further down the coast, thirty to forty of them are built and rigged ready to sally out at the end of each onshore monsoon, to race for the Bangkok

SEA-GOING 'RUA CHALOM'

and up-coast market, and their prices range from ten to fifteen *catties* (£50 to £80).[1]

The other principal type in the Gulf of Siam is the *Rua Chalom*, a name applied to all sailing-craft of the Gulf without distinction of rig, in which there are the high stem and stern posts, into which the

[1] They run up to 6 *wa* (39 feet 6 inches) in length, with 6 *sawk kub* (18 feet 8 inches) beam, and a draught of 3 feet 4 inches to over 5 feet when loaded, the outside depth being 6 feet to 7 feet. The prices mentioned are probably much higher to-day.

planks are rabbeted in the ordinary way. While the *Rua Pet* is deep-hulled and two-masted, and is always the boat of the Siamese, the *Rua Chalom* is a long, shallow-draught vessel, and is more favoured by the Chinese and Luk-Chin [1] fishing population of the coast. The smaller boats of this type are used entirely for fishing purposes. They row well, the crew always standing up on the gratings to the work,

RIDING IT OUT

and pushing the oar before them. Under sail they carry one large standing lugsail, which is reefed in the same manner as that already described, but is seldom furled aloft except in the bigger and deeper boats. As in the *Rua Pet*, there is no purchase to halyard or sheet, and it often takes every bit of five men to set the great mainsail.

[1] The name given to the children of mixed marriages between Chinese immigrants and Siamese women.

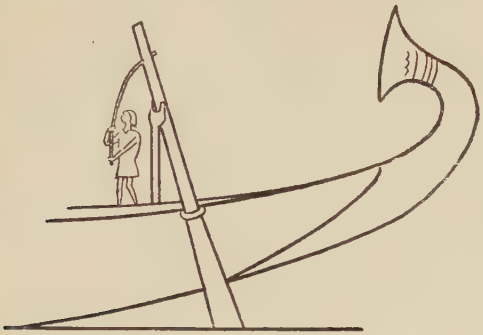
A peculiarity of these boats is the steering gear, which consists of two rudders, slung at the upper end on stout uprights at the quarters, and held in just above the blade by a stout piece of rattan. The lee rudder is that generally used under sail, both because of its deeper immersion, and the greater power it gives to counteract the boat's weather helm. In running before a heavy sea both are used, and when lying at their fishing-stakes it is not unusual to see one unshipped and set up aft to act as a mizen

'RUA CHALOM'

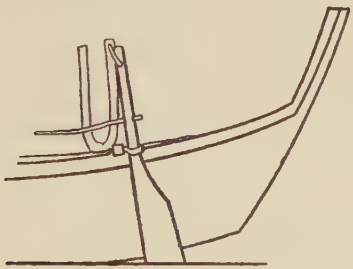
to keep the boat's head to sea. In port they are slung up at the quarters, and, flat side uppermost, they are useful for fish cleaning or cutting bait, or for eating the morning rice off. This method of slinging and using quarter rudders is the oldest used by men in sailing-craft, and is the first development from the simple paddle rudder which has in all ages been the first method of steering boats.

The simple paddle or steering oar may be seen in every stage in Siam. The king's state barge is steered by two men with long steering paddles in precisely the same way as was done in the case of the Egyptian

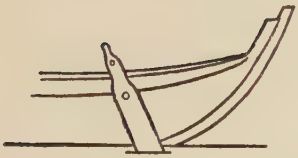
boats of the Third Dynasty, 6300 years before Christ.[1] The long, fixed steering oar of the up-river cargo



QUARTER RUDDER—EGYPT



QUARTER RUDDER—SIAM



QUARTER RUDDER—NORSE

QUARTER RUDDER—ROME

carrier of the Lao country is used on the same principle as that of the more developed steering paddle in the

[1] Villiers Stuart's *Nile Gleanings*.

Egyptian ships of the Punt Expedition, 1600 B.C.,[1] which simply turned on its own axis. The slung quarter-rudders of the *Rua Chalom* are the same as those used in all the Roman and Greek merchantmen and galleys from 500 B.C. downwards, by the Norsemen and Anglo-Saxons a thousand years after Christ, and by mediæval seamen down, at all events, to the fourteenth century, when the rudder appears to have been first slung on the stern-post, both in the North and in the Mediterranean.[2] It became general in Europe after that date, but prevailed still in the Far East for boats with high stern-posts and shallow under-water body aft, such as the *Rua Chalom*, for which it was peculiarly fitted.

The smaller *Rua Chaloms* are manned by three, or preferably four, men. These are exquisite little craft, and to see them carrying on for the Bangkok market in a strong breeze is a goodly sight.

While they handle the boats very smartly under sail, the tall, dark-burned crews are seen to even finer advantage on a hot airless morning, when standing to their great long oars they force their boats with the whole weight of their glistening bodies through the calm, streaked water. At such times, beating the water in long, powerful strokes together, about eighteen to the minute, bending their bodies until almost horizontal at the finish, and springing smartly to an upright position again poised on the back-placed leg, they maintain a speed of six knots or more for a couple of hours without a spell.

[1] Holmes's *Ancient and Modern Ships*, and Torr's *Ancient Ships*, and other works.

[2] The Poole seal of 1325 first shows this method of slinging the rudder, and Charnock figures a Venetian galley of this century with a similar rudder.

The larger sea-going fishing-boats are between 40 and 50 feet long, and at the waist often have an additional strake or two built up for about two-thirds of their length, to keep the water out when heeling, the freeboard when loaded up being rather insufficient at this point. The contrivance reminds one of the canvas screen fitted along the waist of the low-sided Greek and Turkish boats of the Aegean.

They carry a crew of seven men, and are engaged principally in the Pla-tu fishery, which takes place on the east and west coast of the Gulf in turn, as each shore gives shelter to the fish from the prevailing monsoon. Elaborate fishing-traps are built each season at great cost and trouble, as soon as the onshore winds begin to give way to the offshore monsoon. Converging lines of stakes half a mile long, worked into the mud and sand of the bottom, lead to the central trap, a large strongly built enclosure of interwoven stakes. So solidly are these built that sailing at night necessitates a very sharp look-out, when in shallow soundings, among them, as collision will mean loss of a bowsprit at least, if nothing worse.

A good deal of seining is also done by these boats, one or two of the smaller three-men boats being in attendance. The results of the catch are dumped into big tubs or pits, where in the course of a few months they mature into that popular delicacy called 'balachong' or 'kapi,' dear to the heart of every properly educated native of the Indo-Chinese peninsula. It has other uses besides tickling the palate of the epicure, and stimulating the olfactory nerves of the European traveller; for it is said that the number of depots along the coast have saved

the Siamese Government large sums annually which would otherwise have had to be expended on light-houses, the odour even on foggy nights carrying further than the brightest light, and warning the mariner of the coast far more effectually.

One peculiarity of these boats remains to be noted. Their rounded shallow form of hull makes them sail well over the wide mud expanses exposed along some portions of the Gulf at low water. Coming in with a fair wind, each boat takes its own well-

'RUA CHALOM,' CLOSE-HAULED

worn track leading to the long fishing stages built out from the land, and with a man or two out over the stern on their broad wooden mud-skates to steer, they sail gaily in to their mooring, half a mile or more as may be necessary.

The largest form of *Rua Chalom* used for trading is two-masted, and a much deeper vessel than the fishing-boats. Sometimes the double rudders also are discarded, and a single rudder is shipped in the ordinary way upon the stern-post. The boats then

become much more allied to the small Chinese two-masted trading junk, and often have the China sail instead of the Siamese form of sharp-peaked lugsail.

The strong coach-roof abaft the mainmast is retained, and, in addition, the helmsman is often accommodated with a peculiar little shelter right aft, the floor of which is built out considerably on the afterside. This is the embryo of the more commodious stern galleries of the true junk.

CAMBODIAN AT SEA

One other peculiar craft is met with on the Gulf, called simply *Rua Ta*, from its enormous cod-like eye. It is apparently Cambodian in origin, and comes from various small ports down the east side. It cannot claim to be very graceful, and is a lumbering hull, with grotesquely painted fore and stern galleries. It generally is rigged with the form of lug common in the Gulf, only with less peak, and has a mizen. But the China lug is adopted in some

instances, with advantage in the set but the disadvantage of greater weight aloft. They run up to 60 feet in length and have large carrying capacity, but are neither fast nor weatherly, nor as taking to the eye as the other craft of the Gulf, or the true junks of Southern China.

Just as on the mainland of Indo-China the Chinese have played a very prominent part for centuries, so on all the seas that wash the coast of the great peninsula their ships and their seamen have main-

CAMBODIAN COASTER

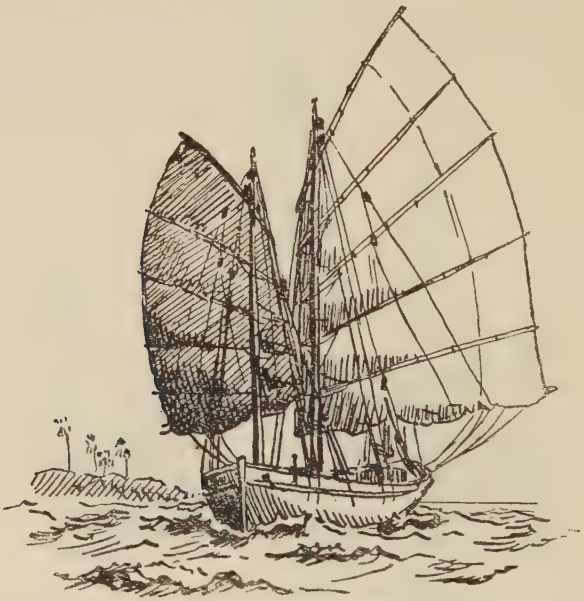
tained regular navigation. The junk rig, described elsewhere, is as common as any other in the Gulf of Siam, although the great increase in steam tonnage has given the death-blow to the great junk trade of fifty years ago ; and the five-masters, like the square-rigged ships which used to be seen beating out in crowds over the Me Nam bar in the old days, have now almost disappeared. Besides the large three-masted junks of several hundred tons, which still come round in considerable numbers from southern ports in the China Sea in the north-east, and return

with the south-west monsoon, many small junks survive, and indeed show no sign of disappearing from the Gulf. They are nice, handy little craft, from 30 to 50 feet long, generally two-masted, and manned by what is for Chinese a small crew of four

A COAST TRADER, EAST SHORES

or five men. They are genial, pleasant fellows to sail in company with, these Chinese sea-coast settlers, and are full of fun and good-humour. Beating down under the lee of the Malay Peninsula, in the south-west monsoon, in company with half a dozen of these little traders, one may have opportunities of

seeing some very fine seamanship exhibited by these men in the terrific squalls which break at that season. At night, cross-tacking with these boats is rendered picturesque by the flares which they light each time they go about, to appease the devils of the sea. In my own boat, a thirty-six footer, while engaged on duty in this locality, I have followed these boats



'LORCHA,' RUNNING

in the dark, warping against the current into the river harbours along the coast. They have the aid of three or four crews from neighbouring boats, and their illuminations on the poop, their splashing oars and quants, and the pandemonium of yelling, chorus-singing, and gong beating, awake the whole jungle neighbourhood for miles; though, as our exhausted crew found to their cost, it all seems to do but little towards appeasing that devil of a current.

The absence during part of each month of one of the two usual semi-diurnal tides, a phenomenon also observable in the Gulf of Tonkin, makes getting in and out of these badly marked and ever-shifting channels a matter often of danger and always of difficulty. For the 'live' tide, like the owl, invariably chooses the night-time for its walks abroad, being apparently shy of observation.

'LORCHA,' CLOSE-HAULED

Reference must be made also to a very distinctive craft used in Bangkok, the *Lorcha*, or sailing lighter. These craft run to two hundred or more tons, and are used to carry rice out over the bar of the river to ocean ships completing loading in the roadsteads at Kaw Si Chang or Anghin. The hull is built in Bangkok, of the good teak wood of the country, on European lines; but the rig is that of the usual Chinese three-master, for facility of management by their Chinese crews. They are fine, powerful vessels,

and some sixty or more are owned in Bangkok by the various more important exporting firms. Canvas was introduced for the sails by my old friend the late Captain Hicks, in place of the red-brown matting, but it is doubtful if its greater durability is sufficient to make it cheaper in the long-run. The matting sails only last a year, and sometimes get so full of big holes as to be dangerously near carrying away completely in a hard blow after eleven months'

SIX HUNDRED MILES AGAINST THE MONSOON—ALL SAIL

wear; but they are certainly more picturesque and, it is said, lighter for handling.

On one occasion, when going on duty for the Siamese Government, I sailed a boat thus rigged, but without the mizen, from Bangkok to Singora in the Malay Peninsula and back, a distance of some twelve hundred miles.[1] She was an old teak steam

[1] *cf.* the author's *Sea-Wake and Jungle-Trail.* London: John Murray. 1925.

launch built for the Me Nam river, and was about 36 feet long over all, but leaky, and narrow and crank for her size. I had a young Siamese officer, my assistant surveyor, with whom I had been many journeys, who shared the cabin with me, and the crew consisted of my Siamese servant and boat-boys. Every Siamese is used to a boat, but only two of them had been to sea with me before. They turned out splendid sailors, and endured the dis-

REEFED

comfort of a beat of six hundred miles against the monsoon with that cheerfulness which is characteristic of the Eastern, and makes him the best fellow-traveller in the world.

We put the handiness of the Chinese lugsail to a very practical test in the squally weather of the rainy season. The monsoon wind is ever varying in force and direction in the Gulf of Siam, broken as it is in its passage from the Indian Ocean across the high ranges of the Peninsula. At night a very sharp watch had to be kept for squalls, and simplicity and quickness in reefing and 'making' sail proved

to be of the utmost value. Unless the night was unusually fine we never carried the jib, a rare sail in these waters and our special pride, but had one batten of the mainsail down in the topping lifts, and whole foresail. The boat was then quite easy for one hand to manage, and as we were all suffering from malarial fever, it was important not to have more than were absolutely necessary in the deck-watch. Black squalls would threaten and batter us, or would pass away to leeward some miles ahead or astern, always, however, increasing the wind and the sea. When one of these was approaching, all that had to be done was to take a turn of the tiller rope, go forward to the main halyard, and lower away until so many battens were lying snugly in the topping lifts; then similarly with the foresail. Both the sheets would need shortening in a bit, and the thing was done. The watch could return to the cock-pit, take a cast of the lead and a look at the chart, wrap up in his oilskins again, take a last look round through the night-glasses, then bow his head to the stinging, blinding onslaught.

As an instance of the kind of weather experienced, I give an extract from the log, the day after we started back from Singora, when I had finished my duties:—

August 21—8 A.M.—Westerly gale all day. Posted letters. Getting ready for sea; awnings and boat-boom in; running rigging rove; Berthom dinghy and gear stowed; unmoored ship, etc.

4 P.M.—Got under way. Squalls off the hill, very strong; set three-reef main and two-reef fores'ls, and reached up the harbour to clear fishing-stakes; turned and went bowling out; awkward back-squalls under the Head. Cleared stakes and

went out down the channel. Wind outside N.W. 4, and a short tumble of sea breaking; flood making up against it. Very dirty-looking to windward.

6 P.M.—Tacked inshore and kept her going easy till supper cooked (rice and salt fish curry, rice and sugar pudding, and tea). Wind went to W.N.W. 3; set all sail along the coast on port tack against head sea; this and head winds seem to be our fortune.

Midnight.—Turned out, called by Yen. Very dark to Nor'ard spreading out our way. Wind N.W. 3. Took in jib; tacked ship, four-reefed main and foresail. Sent boys below. Came on to blow heavy with tremendous rain for 1½ hours, by which time fairly under lee of the land. Everything soaked. Very cold.

August 22—1.30 A.M.—Wind W. Tacked ship and shook out two reefs in both sails.

4 A.M.—Moon setting; very dark but fine, and water smoother. Shook out whole foresail.

6 A.M.—Turned out the rest. Wind W. 2-3; set whole sail, and got breakfast as soon as possible. A Malay penjajap astern, and a big Malay (with China sails) outside. Dull-grey cloudy sky, but finer-looking. Only damage last night was breakage of big thermometer. As we tacked in, lots of seining parties along the shore, with their long canoes, shouting and hauling; small temporary fishing cottages under the Casuarinas; at the back, low jungle.

9 A.M.—Aneroid 30·09; wind W. by S. 2, sunshine. Singora hill still just visible astern.

10 A.M.—Freshening. W. 3-4, going grandly.

11 A.M.—Took in foresail, passing big villages. Clouding up and rainy-looking.

Noon.—Aneroid 30·02; thermometer 80° Fah. Off Tung Ranawt, thirty miles from Singora Island. Freshening. Took in jib; set three-reef fores'l and four-reefed mainsail. Wind hauling N.W. 6.

1.30 P.M.—Close-reefed plunging into it, blowing hard, squalls to south'ard.

2.30 P.M.—Shook out two reefs. Wind W. 5.

3.30 P.M.—Took down two reefs again. Wind W. 6, squalls to Nor'ard. Going fairly dry.

4 P.M.—Close-reefed: blowing harder than ever, W.N.W.

5 P.M.—Shook out two reefs. Wind W. 5, dull blank wall of blue cloud over Lakawn mountains, showing their 6000-feet peaks far to the north-west. Everything same cold steel-blue colour.

6 P.M.—Got supper, and very glad of it, as all very chilled.

6.30 P.M.—Had all sail on her. Weather finer.

We reached Lakawn Roads next morning, meeting only one heavy squall during the night which lasted some hours.

On only one occasion, in the upper part of the Gulf, were we reduced to less than four reefs. A very bad squall struck us before sunset, and although all sail was off her, and we had only the bare masts and the bunched-up sails lying in the topping lifts to hold the wind, we were nearly on our beam-ends for an hour. We all but lost the Berthon stowed

SHIP'S LIFEBOAT, CHINA LUGS, REEFED

on deck; but were able by degrees to hoist up one batten of the mainsail to keep her head to sea. During the rest of the night we beat to windward under four reefs.

With a raw crew such as we had no other sail could have possibly been so easily handled on all these occasions as the China lugsail, and for those seas there is nothing, in my opinion, to equal it.

Another experience when on a pleasure cruise in a 40-ton lorcha on the eastern side of the Gulf was equally favourable to the China lug. It was also

during the south-west monsoon, from which we had sought shelter for the night among the islands inside

CROSSING THE BAR, ME NAM

Cape Liant. As the weather did not moderate, and a heavy sea and strong wind continued next morning to drive in on the coast, it came to beating

CARGO-BOATS, ME NAM

out off the lee shore through a very threatening line of breakers which thundered along the edge of the four-fathom line. The crew consisted of two

Malays and my faithful Siamese ' boys.' We hoisted every inch of sail that we dared show, as it was a case of pressing her, and a single miss stays was going to be a serious thing. But nothing could have been more manful than the way that little ship swung up to the breakers, the mizen well in bringing her head to wind, and the foresail paying her head off on the fresh tack. Once she gathered rapid sternway, helped by the steep breaking sea, which was roaring over black rocks not fifty fathoms

LORCHA, WORKING OFF A LEE SHORE

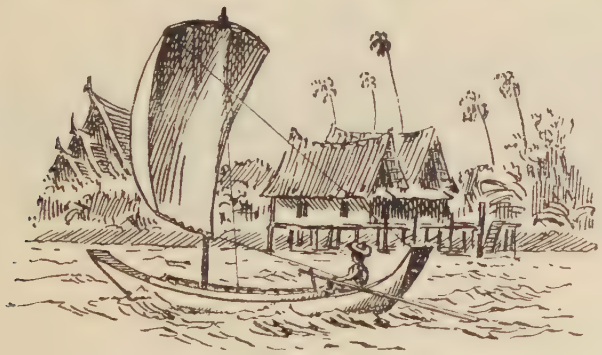
to leeward. Every one stood silent on deck at his station, watching. Only an exclamation from Yen, the coxswain, as a sea toppled over forward and carried him off his feet, caused a general laugh for a single moment. It was the last ledge we had to clear. We slowly gathered way and were soon in the long regular sea outside, then lowering another batten in the mainsail, we could breathe again. The customary chatter of the Siamese was speedily renewed with not a few jests at the expense of the mermaids known to inhabit the locality, and specula-

tion as to their feelings at seeing us fetch out in safety.

It is impossible to leave the craft of the Gulf of Siam without a word about the hardy, cheery fellows who build and man them. Whether it was the gentle-

ANCIENT BOAT, LIKE SIAMESE SAMPAN (GIZEH MUSEUM)

manly, pure-blooded Siamese crew of a *Rua Pet*, or the big, rough Luk Chins or Chinamen sailing the *Rua Chaloms*, they were the same ; in all weathers and under all conditions cheerful, willing, and astonishingly friendly. In their language, their ways,



BANGKOK SAMPAN

and the nameless something which is bred in seamen, they are quite distinct from the shore-going population ; and their smartness and pluck in handling their little vessels makes them a seafaring class of which any coast might be proud. They eat little,

and know few luxuries; clad often in nothing but a pair of short, loose, white or blue trousers coming halfway down the thigh, they face rain and sun, cold and tropic calm. Their hard brown skins glisten like oilskin coats, and seem as hard and impervious to weather. Finer built men it is impossible to meet, and with a handkerchief round their thick black

GOING NORTH, LIGHT

hair, and a coloured scarf thrown across their great brown shoulders, they make fine figures of men. And beneath a weather-beaten, and even an uncouth, exterior there lies an honest, gentle heart that finds expression in a quiet voice and ready smile.

I had a fairly long and varied experience, and have lived at close quarters with these men within

the narrow confines of a 35-footer, and at the end can only say that they have a large share of that direct simplicity of mind and heart which is in the gift of the sea. Remarkable as is the seafaring nature for kindliness of heart and contentment of mind, these characteristics are nowhere more pronounced than in the sea-going classes of the Gulf.

ME NAM RICE-BOAT, COMING SOUTH

Religion and climate, and temperament resulting from these, have gone far to make the Burmese and Shân, the Siamese and Malay, the excellent comrades that they are to any man whom fortune may lead into their jungle tracks. But if the thoughts of the jungle man are worth exploring, and the sights of his surroundings are worth seeing, those of his

brother sailing the monsoon-whipped seas of the tropics have always seemed more so. For into his life has entered not only the voice of the jungle, which admits all the sons of Nature to secrets that lighted cities cannot do, but to him has called that deep song of the sea which adds a peculiar temper to the most unpromising material, and turns the

ON THE ME NAM

true stuff into glowing metal. With a certain wistfulness which is alike in young children and in sailormen, there is especially among these people a patient contentedness of mind which, if it will never go far to build up a rigorous people in the Western sense, yet holds a very real charm, and has surely a merit of its own in contrast to the feverish unrest of much of Western society. If the 'divine discontent'

which is the heritage of the British race is one of the sources of its power, there are yet many aspects of it, which are to be met too frequently in society, which certainly appear to hold but little of good for the future of any race, and which cannot but compare curiously with the state of mind which one has left dwelling by those long stretches of palm-fringed shore, with the deep jungle sounds behind and the blue, wind-flecked waters before—shimmering sleepily

AN UP-COUNTRY FAMILY HOME, SIAM

in the noonday sun, or roaring with their many voices in the thunderous night-squalls.

I have said nothing about the river craft of Siam, for, like most river boats, they only use the sail as an auxiliary in fair winds. But of their kind they are the handiest, best-finished vessels to be anywhere met with for inland navigation. They are almost invariably teak-built, or with teak topsides over a *thingan* keel and bilge-piece. The beautiful teak

colour is preserved and heightened by several coats of *chunam* or *dammar* oil. Complete coach-roofing of beautifully worked reed matting keeps off the fierceness of the sun and the torrential rains. The fore-deck is open for the use of the crew when working the sweeps or quants, and on the lofty platform of the high stern the steersman stands, steering

CAMBODIAN LAKE-BOAT

with his toe while he gently helps his boat forward with a long oar slung in the usual grommet on a stout crutch at the gunwale. This method of using the oar is universal in Siamese waters. The oarsman stands to his work as does the Venetian gondolier, and when working a sampan or other light craft, he steers his ship at the end of the stroke by the

underwater 'feather.' The action is graceful and effective in narrow waters and crowded waterways.

The *Rua Pet* is the usual Siamese type, while the larger *Rua Chao* or rice-boat is of Chinese build.

The *Rua Nua*, as its name implies, is the boat of the Lao country northwards, and is seldom sailed. The peculiar long-nosed and long-tailed variety is the boat of the west or Chiengmai river, while a snub-nosed, short-sterned type of larger burden is used in the Eastern main river.

Not infrequently in the big rice-boats the rudder is slung on the quarter, as in the *Rua Chalom* and in the ships of the ancients, a pair of them being often used one upon each quarter.[1]

A tall bamboo mast setting a high-peaked cotton lugsail laced to a boom at its foot is the usual inland sail, and is fitted alike to the rice-boat of 12 feet beam and the tiny dug-out of the monastery novice scarcely 10 inches in width.

And these craft, of infinite variety of shape and finish, are the homes of a population numbering several hundred thousand, who spend their lives on board navigating the intricate and beautiful waterways of their country, which to them is more truly than to most nations the Land of the Free.[2]

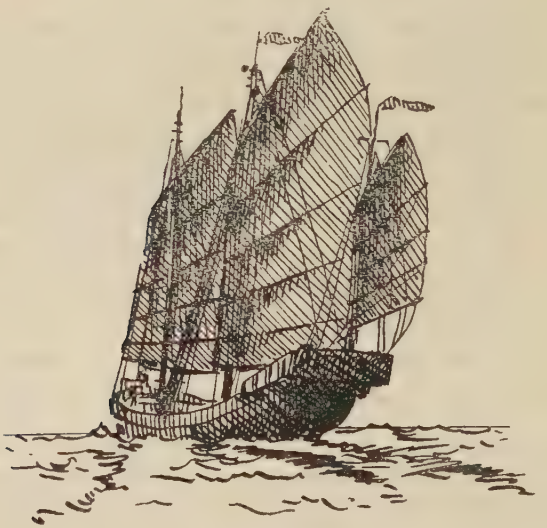
[1] For a further description of these river boats and the life of their people, the reader may be referred to the author's *Five Years in Siam.*

[2] 'Muang Thai,' the Land of the Free, the name which the Siamese themselves apply to their country.

CHAPTER XIII

CHINA AND JAPAN

In no region of Art and Crafts have the Chinese shown greater independence of thought than in ship and boat building. The striking originality which



KWANTUNG JUNK

pervades their architecture, their painting, and their life on shore, is even more characteristically displayed by them afloat.

At the hands of Western travellers the Chinese

IM. SOUTH CHINA JUNK, SINGLE REEFS

To face 454

junk[1] has received little but mockery and thinly veiled contempt; the writer treats it with his smartest ridicule, the artist in glaring caricature. Yet, examined fairly, the only excuse for such treatment seems to lie in the wide gulf which separates the thoughts and ideas of the white and the yellow races, and makes it apparently almost impossible for the one to come to any true understanding of the other. As an engine for carrying man and his com-

WEST RIVER JUNK (FROM A CHINESE OIL-DRAWING)

merce upon the high and stormy seas as well as on vast inland waterways, it is doubtful if any class of vessel is more suited or better adapted to its purpose; and it is certain that for flatness of sail and for handiness the Chinese rig is unsurpassed. A most capable authority gives it as his unhesitating opinion that the

[1] The origin of this word, applied by Europeans generally to all the large native luggers of China and to the old square-sail vessels of Japan, is uncertain. It appears to have originated with the early Portuguese seamen and to be a corruption of the Javanese 'Djong,' applied to large sea-going Chinese and Malay craft.

smaller South China junks are 'the handiest vessels in the world.' [1]

Until the *America* visited this country, when modern flat-sail setting first asserted its superiority, the Chinese were undeniably far ahead of all other nations in their comprehension of the principles of scientific fore-and-aft sailing. The centre-board and leeboard have been used in China, whether in the big

HONG KONG JUNK

Hainan junk or in the humble 'sampan,' from times antedating the visits of the old Norse 'keeles' to these islands. When our forefathers paddled alongshore in open boats, the Chinaman sailed to East Africa in five-masters. We have seen the nineteenth-century yachtsmen develop the overhang, which has culminated in *Britannia* and the *Shamrocks:* the

[1] Captain C. C. P. FitzGerald, R.N., in *Boat Sailing and Racing.*

Chinese have built fishing-boats on this principle for a thousand years. In windlasses and labour-saving appliances the Chinese appear to have been always far ahead of the standard reached by European nations until the last century.

Yet, curiously enough, while we have worked out a whole history of naval architecture, ranging from

AT WUSUNG

the coracle to *Mauretania*, *Cutty Sark*, or *Candida*, the hardy Chinese sailors, true to the conservatism of their race, have continued to weather the typhoons of the stormiest of Eastern seas in craft which, while they yield nothing in the matter of handiness or weatherly qualities to the finest modern sailing-craft developed by Western nations, have in all prob-

ability scarcely altered in a single detail during that period, or been improved by a single knot of speed.

In things nautical the Chinese are the Dutchmen of the East. Both peoples have a curious and distinctive love of bluff above-water lines, of bright varnish, of deck-houses, and of pole-masts with long vanes above the truck. Both have an enormous percentage of their populations directly interested in

AFTER A TYPHOON, OFF SWATAU

water transport and trained to the handling of sailing-craft. Both know better than their neighbours the value of leeboards. If we were to continue the parallel, we might say that both races wear wide trousers, are expert gardeners, and are possessed of the most unlimited supplies of perseverance and industry known in their respective continents. However fanciful the parallel may be, the yachting visitor in Holland who

has had experience of the playfulness of his Chinese brother may be most forcibly, if not pleasantly, reminded of old times in the East by the mud and stone-throwing propensities of the young Hollander sportsmen among the genial waterside population, this form of greeting being, as far as my experience goes, strictly limited to Holland and China.

It would require years of careful observation and study to give anything like a complete account of the

LEEBOARD BOAT, YANGTZE—REEFED

infinite varieties of craft which are used by the Chinese to meet the varying requirements of the vast floating population dwelling along their widespread coasts and enormous inland waterways. A few remarks may, however, suffice to show that the Chinese junk, instead of being, as seems to be commonly supposed, the most lubberly and cumbersome of craft, is in reality, like the line-of-battle ship of Nelson's later years, as perfect in its own way as it can well be.

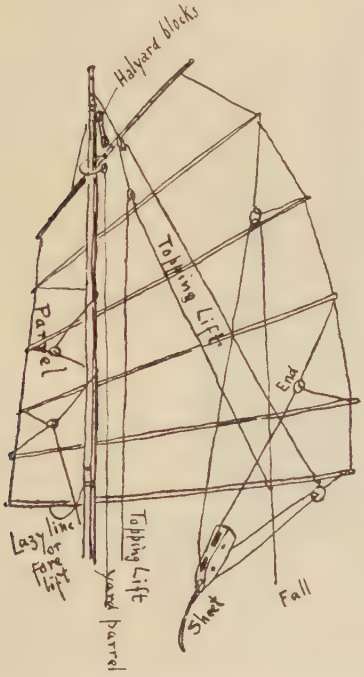
The observer must not be carried away by the

peculiarities of the superstructures usual in all the larger junks. They are embellishments which add very greatly to the comfort of life on board, but in no way affect the under-water lines of the ship. A little observation will show that the under-water body of the junk, especially in the south, is generally very 'sweet,' and by no means far removed from that of a corvette of eighty years ago. The frequent absence of keel in the junk is, however, against good work to windward. The deep rudder, which at sea is

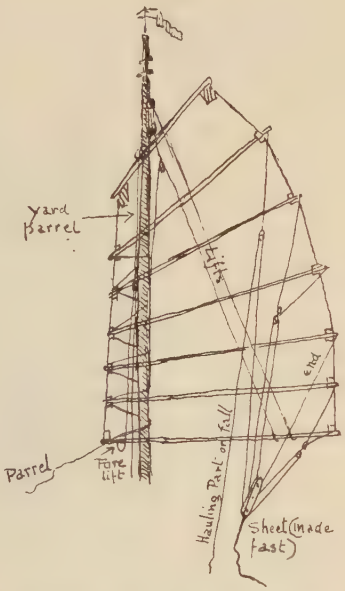
IN THE LYMUN PASS

lowered down the trunk by windlasses, and extends well beneath the ship, and the forefoot or 'gripe,' which is often extended under the bows, help considerably to hold the vessel up to windward. A few hours spent watching the daily crowd of junks beating through the Lymun Pass out of Hong Kong harbour during the north-east monsoon will persuade the greatest unbeliever that for speed and set of her sails the junk is not easily beaten; and a finer sea picture not the Thames in Sea Reach can show.

The Chinese sail is a balance-lug extended and stiffened by battens, generally of bamboo, with a more or less rounded leech. It is hoisted on a pole-mast, often a very fine spar, the halyard passing through a large double block on the yard, and a treble block at the masthead. There is a hauling parrel to the yard,



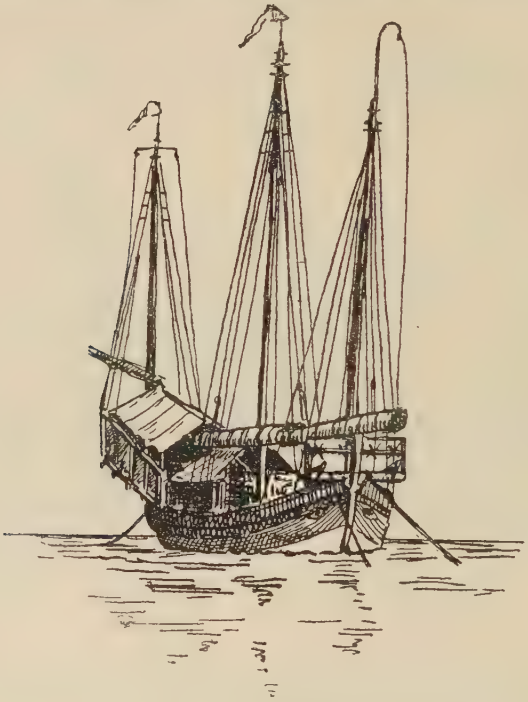
CHINA LUGSAIL, WITH SHEET, TOPPING-LIFTS, AND PARRELS



SHEETS, ETC., OF FIVE-BATTEN LUG

which keeps it to the mast, and helps to peak the sail when reefed. Each batten has its own parrel round the mast, and its own single part leading to the main sheet. There are various ways of leading these sheets, one or two of which are here illustrated, and they constitute the secret of the flatness of set of the China sail. The hauling part coming from the upper batten

gives a slack sheet the moment the halyard is let go for reefing. Thus in case of a squall only the halyard need be touched. Double topping-lifts on both sides of the sail form lazy lines, into which the sail falls on being lowered for stowing or for reefing. Reefing is thus simplicity itself; the halyard is let go, and the



WAITING FOR SOUTH-WEST MONSOON

weight of the sail and battens brings the sail down into the topping-lifts; the sheet slacks itself and spills the wind; two or more battens are thus bunched together along the boom, and nothing further is necessary but to gather in the sheets by hauling in on the fall from the upper batten. There is a gathering line from the masthead to the boom abreast the mast.

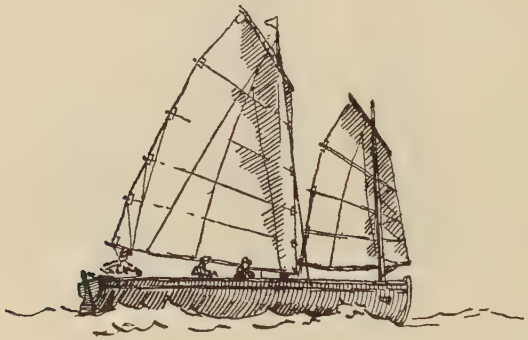
The luff of the sail is cut in various ways. In the big single-masted boats of the inland waterways of the south and the neighbourhood of Canton, the luff is cut so as to stand out a long way before the mast as in the case of our Western dipping lugsail, thus making a true ' balance '-lug, and bringing the centre of effort farther forward. The moment the Chinaman goes to sea, however, in common with all other blue-water sailors, he appreciates the advantage of splitting up his sail area into component parts which are more

WEST RIVER PASSENGER JUNK

easily handled, and are more convenient for bringing a vessel into stays and paying her off in tacking. The mainsail is reduced, and then instead of the modern bowsprit and jib-headed staysails of the West, he plants a foremast right up in the eyes, with in most cases a considerable rake forward, reminding one of the old Mediterranean ' trinchetto,' [1] and sets a large foresail upon it in the shape of another lug. The

[1] The ἀρτέμων of the log of St. Paul's shipwreck, and the *artemon* of the elder Seneca and others, which from coins of the second, third, and fourth centuries appears to have been raked over the bows, and to have been generally adopted for running, wearing, and increasing the general handiness of the old one-masted ships.

mainsail in this case is cut with its luff straight up and down the mast, while the foresail is generally so cut that quite a third of its area, and even more than a third of its length of boom, is before the mast. Of course in these heavy sails there is a tendency for the whole sail to swing out forward, and a single tack-rope, which is sufficient to hold aft the small balance lugsail of an up-river skiff, could never stand the strain which would be put upon it by the lurching of these enormous weights in a head-sea. Consequently the fore end of each batten on the sail is



SHIP'S 28-FOOT CUTTER, CHINA LUGS

brought aft to the mast by a lacing which can be hauled upon or slacked up, as may be required, from the deck; and by this means the lower battens can be bowsed aft, and the required peak given to the sail, while the friction and strain are distributed over the whole mast. It takes not a little skill to set up a Chinese lug properly; and in a head-sea, or in hoisting sail after rain, the groaning and creaking which goes on up and down the mast is prodigious. But the moment the halyard is slacked up, everything else slackens off automatically, and the sail is almost safe

never to jam, and to come down as freely in a squall as in a flat calm. I can speak from some experience in handling this form of sail, and may say that once having learned the set and balance of the sails for various points of sailing, nothing can surpass the handiness of the rig, but every sail requires a little knowing if the best results are to be obtained from it.

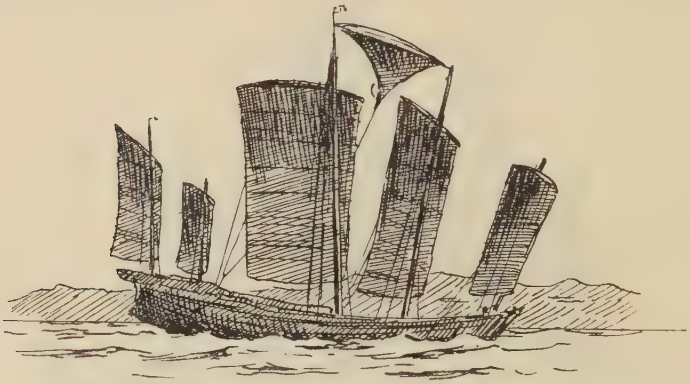
The mizen, right up on the high poop, and fre-

FIVE-MASTER, WUSUNG BAR

quently a trifle over to the starboard quarter, is generally adopted by the larger sea-going junks, for the very same reason that it is used very generally in Europe, namely, to reduce the size and increase the handiness of the mainsail necessary for the ship. Instead of having to hoist the heavy mainsail in manœuvring in harbour, the mizen can then be used in combination with the foresail; by taking in the mizen in a breeze the equivalent of a reef in the

mainsail is easily attained without the necessity of handling the heavier sail at all; while, when there is a danger of missing stays, the mizen is often invaluable.

In the large five-masted junks of the north, which were more common formerly than they are now, two mizenmasts may generally be seen, one stepped broad out on each quarter on the high poop. The weather of these is set, and the advantage of its position is that it is never becalmed by the mainsail,



FIVE-MASTER, WUSUNG BAR

and always gets a true wind. These junks were built very long, and were by no means too handy in stays. Consequently these two mizens, though perhaps unsightly to the Western eye, were invaluable as steering sails pure and simple.

In mast plan the junk generally adheres to the three-mast division—the foremast with forward rake literally in the eyes of the vessel; the mainmast stepped a little forward of amidships, and the mizen on the poop. Many of the small southern junks, however, have main and foremasts only, while the

river craft generally adopt the one-mast plan. The immense pole-masts of the junk are not the least of the characteristic features of the vessel; they are splendid spars, carrying their size well up to the double or treble block of the halyard close to the masthead. In the southern junks the masthead is fitted as a rule with two or three cross-pieces like short spreaders, over which the main rigging and other gear goes. The main shrouds are as a rule fitted with hard-wood ratlines two or three in number at the

HAINAN TRAWLERS

upper end, with a view apparently of spreading the shrouds (*vide* sketch at p. 462). In the case of the mizenmast, a short crossyard is fitted above the rigging, with flag halyards looking just like a diminutive signal yard. I cannot remember ever having seen it put to any use. The masts are generally stayed with a pair of shrouds each side, and backstays, but the weight and pressure of the sail are well distributed all up the spar by the battens and parrels, and, like the Dutchman's huge pole-mast, the

junk mast seems to stand with very little support. Above all, the gay red wind-vane flies often with appropriate motto upon it, except on the foremast, where on a slender curved rod a great red flag is hoisted on feast-days, or when entering or leaving port.

The shape of sail north of the Formosa Channel will be seen to be very lofty and narrow. In vessels of great length this shape of sail rendered necessary

OFF AMOY

the additional or second foremast between the main-mast and the true foremast.

The big northern craft which crowd the Wusung river are clumsier to the eye than the smaller southern vessels ; but some of the small fishing-craft to be seen off Amoy are beautiful things, and show that even the great length of overhang which has been evolved by modern scientific yacht construction is another of those points which the Chinese sailor has long understood a good deal about.

While the northern sails are generally lofty and narrow, with square heads and comparatively straight leeches, it is in the South China Sea that the perfection of shape is seen. Here the sail is well peaked, and the yard has a handsome round in it. In place of a multitude of small, somewhat untidy-looking battens, only five, or sometimes four, are used; and a fine rounded shoulder is given to the after-leech. The result is a sail which only the racing cutter's mainsail

OFF AMOY

can excel on a wind, while for handiness in reefing the latter cannot compare with it.

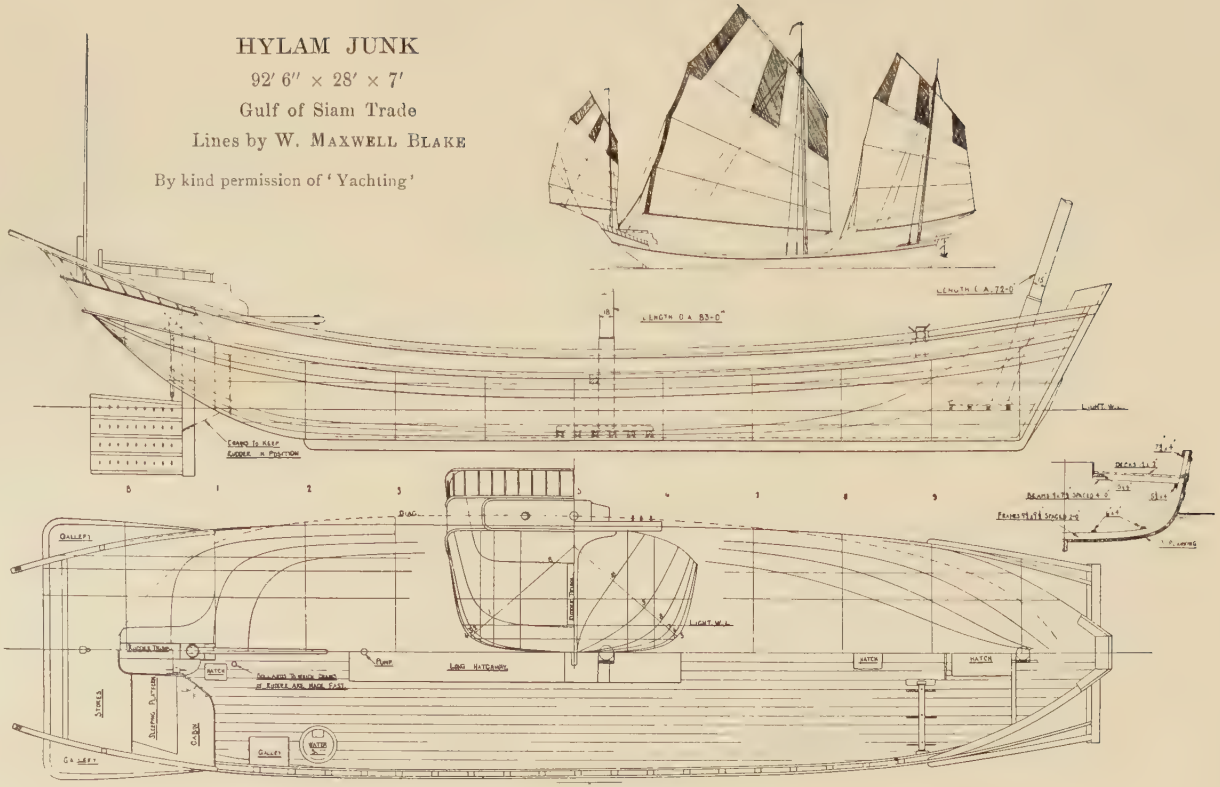
It is interesting to note that among the big trawlers which may be met with generally in pairs off the Hainan and Kwantung coasts, the staysail is used a good deal when on a long board with the trawl down. Besides a main staysail between the main and foremasts, a flying main-topmast staysail is set aloft.

The lofty poop of a Chinese junk makes one think that the Chinaman has again anticipated us, and that

the modern model dwelling or hotel is merely a latter-day imitation of a system of overcrowding which has been generally practised by the Chinaman for a trifle of some thousands of years. Whole families live in it, like rabbits in a hillside, burrowing in and out of its lofty sides, living, playing, eating, sleeping (and, of course, gambling) in its nooks on deck, or in its depths below, for months and years, at sea, in port, in typhoon and calm.

The high poop is practically universal in all the sea-going trading junks both of the northern and southern Chinese ports. It is an essentially logical method of carrying out the sweep of the line of sheer and it gives the necessary accommodation for the gear for hoisting and lowering the heavy perforated rudder, which is so efficient a feature of the junk. In many of the southern junks it is fitted with wing and stern galleries suitably painted and often ornamented with plain but effective woodwork. On this poop the mizen is stepped, and beneath it the helmsman controls his huge tiller and tiller-ropes. While in some of the smaller junks the rudder works on a regular stern-post, in others it is fitted in a rudder-trunk, the stern-planking being rounded in in beautiful curves (*vide* p. 456). In the northern ports the whole stern is often boxed in in a heavy-looking wooden structure, vastly commodious, but hardly elegant to the eye.

The bow of the junk is not its least characteristic feature. Over a staging standing on a big transverse beam fitted to the stem-head, and projecting over each bow so as to answer the purpose of a cat-head, are fitted the anchor windlasses, and here may be seen the great single fluke wooden anchors with shanks twelve or more feet in length, and weighted



LINES AND SAIL PLAN OF HYLAM JUNK, AS TAKEN OFF IN SINGAPORE

Length, w. l., 92′ 6″; beam, 28′; depth, 7′

To face p. 470

often with huge stones, which are a relic of very ancient times.[1]

A peculiar wing is often fitted to the windlass staging upon which the eye of the ship is painted. The eye is never omitted by the Chinese any more than by the Maltese or the old classical sailors, for, as John Chinaman most logically says, 'If no have got

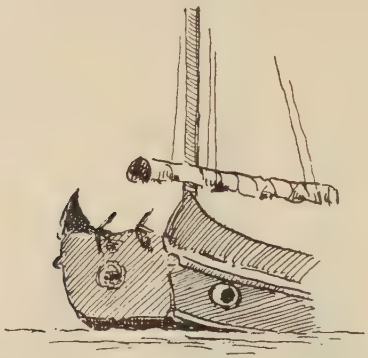
CALM

eye, how can see?' These wings or 'cheeks' are often gaily painted, *μιλτοπάρῃοι*, as in ancient days. The shape of bow differs greatly in different parts of China, as a glance at the Hong Kong, Amoy, and Wusung types will show.[2]

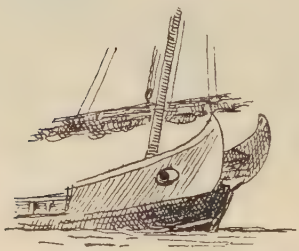
[1] Cf. *ἑτερόστομος* in the *Iliad*.

[2] For delightful studies of junk-bows the reader may be referred to Mr Ivon A. Donnelly's black and white drawings, published by Kelly & Walsh, Ltd., of Shanghai.

The southern-built junks as a rule have a well-defined overhanging stem—sometimes slightly curved, but more generally straight. On each side of the prolonged stem head is fitted the cross-piece and staging referred to, differing in detail according to the size of the vessel. I have seen some of the larger Hainan



NORTHERN JUNK BOW



SOUTHERN JUNK BOW

junks carrying four huge wooden anchors on this staging.

In the north, on the other hand, the overhanging 'swim-head,' or blunt, bow is more common, and the junks sailing out of Amoy, Fouchow, Swatow, and the Pechili ports nearly all display this somewhat ugly sea-punching form of entrance. Under water

it slopes away like the bow of the Dutch 'botter.' It makes a great fuss in a head sea, but as long as the vessel is not too deep it is astonishing how it seems to slide her over the water; and one thing you may be certain of, and that is that she will never bury herself forward. If slow, she is marvellously dry.

The expressive countenance of many junks is caused by the leering expression of the great eye, the wing-

JUNK AWAITING CARGO

pieces of the windlass staging, which look like the pricked-up ears of an intelligent animal, and the slightly cynical expression of the stem at the water-line. To the mere foreign devil the junk bow seems to convey a 'Well, how do you like me?' kind of expression; but it always seems to add, 'It makes no difference to me. I go my way whatever you may think.'

On his decks in the waist of the ship the thorough-

ness of the Chinese sailor may be studied, for every kind of conceivable sea-store is there stowed; not neatly, certainly, but handily, ready for when wanted; and erring only, if it be possible where men have to fight such a veritable storm-hell as the China Sea, on the side of size and strength. Huge windlasses stand under the masts for use, like the στροφεῖα of the ancients, on the halyards; and big capstans, the ancient περιαγωγεῖς, are used for the heavy grass warps.[1]

The lines here given are those of a small junk built and owned by Singapore Chinese, and is typical of her particular class.[2] She shows distinct Malay influence in the shape of the stem-piece, which is not typical Chinese.

They have wandered far, these Chinese sailors:[3] to the east coasts of Africa, or to the Malay Archipelago;

[1] From the derivation of the word, and the context in which it occurs in Lucian, the translation 'capstan' here adopted appears to be in every way a more suitable rendering than that given by Mr Smith in his *Voyage and Shipwreck of St. Paul.* It is suggested by him there that these 'drive-abouts' were oars or paddles placed forward for helping the ship round when slack in stays. There is no evidence, I think, that any seamen have ever used means of this nature in the forepart of the ship for this purpose, and indeed they would be inefficient and unnecessary substitutes for the oars with which even the Roman merchant ships, which depended principally on sail power, were equipped upon each side, which could always keep steerage-way on the vessel and, if necessary, back upon one side and pull on the other and thus get her round at any moment. Moreover, the old form of paddle-rudders (πηδάλια) can be used with great power in bringing a sluggish vessel round, and would render a resort to such a device comparatively rare. On the other hand, the handspike and capstan appear to have been known to the ancients both in the East and in the West, and the handling of the heavy ground-tackle was one of the first problems which had to be solved by the early seamen when the size of sea-going vessels was increased.

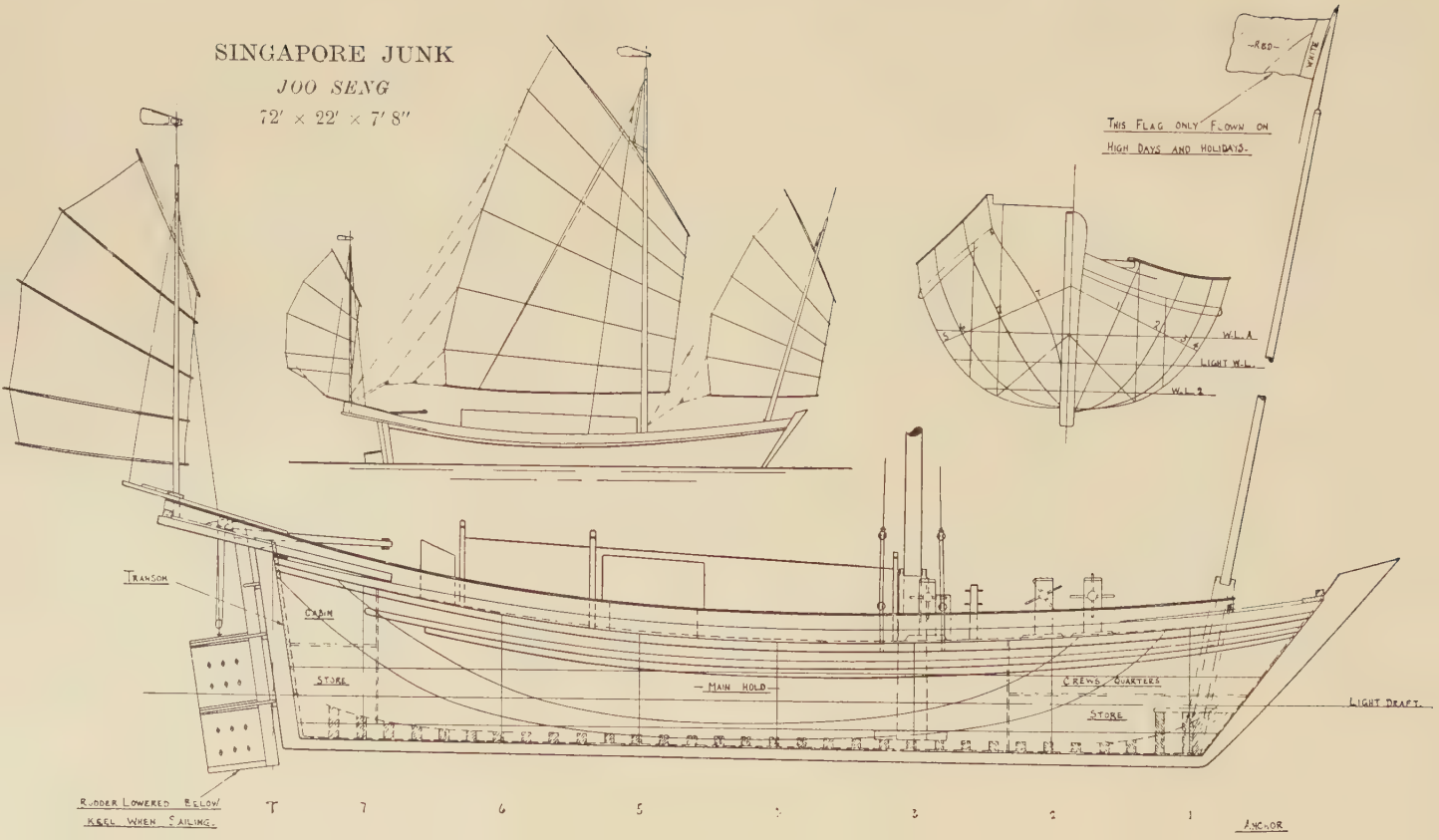
[2] These lines taken off by Mr Maxwell Blake are by courtesy of the Editor of *Yachting.*

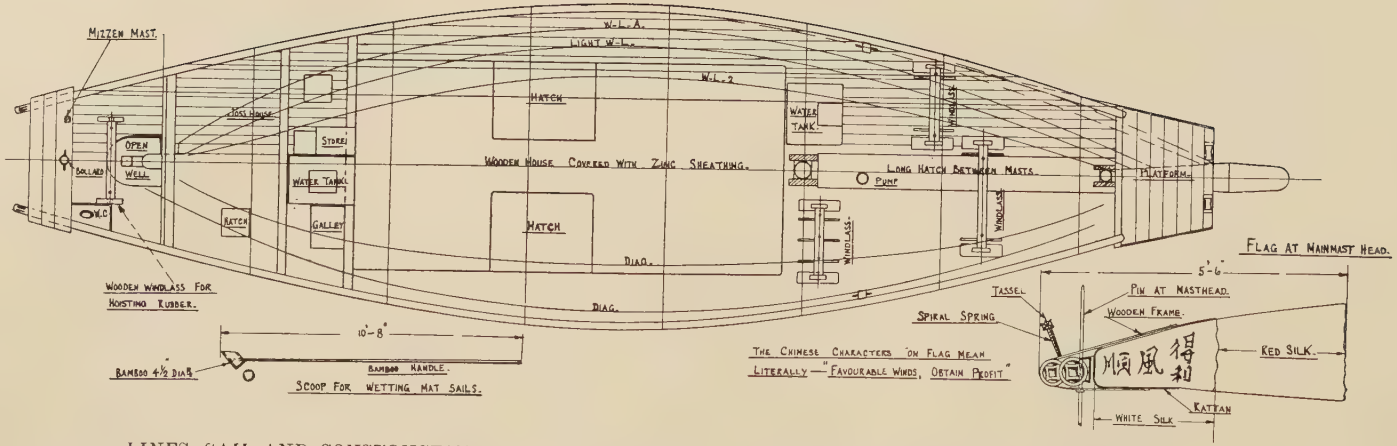
[3] A very perfect representation of a three-masted North China junk is preserved in a fresco in one of the caves at Ajunta, in India. It is figured in Torr's *Ancient Ships*, and must be of considerable antiquity.

SINGAPORE JUNK

JOO SENG

72′ × 22′ × 7′ 8″





LINES, SAIL AND CONSTRUCTION PLANS OF THE *JOO SENG*, TAKEN OFF BY WILLIAM MAXWELL BLAKE

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one meets them in the Bay of Bengal, or the Gulf of Siam; away off Manilla; anywhere between 10° south latitude and 40° north latitude upon the eastern coasts of Asia.

And wherever they go they leave some impress of their methods on the maritime peoples whom they visit, so that even the Malay, sailor as he is, distinctive as he is, has, as remarked elsewhere, largely adopted the Chinese lugsail. For ships' boats the sail has long been in use among knowing skippers in the East, and

SAMPAN ON THE YANGTZE

a ship's lifeboat, rigged with two of these sails, is one of the handiest forms of ship's sailing-boat to be met with anywhere.

Among the various productions of the Chinese boat-builder may be mentioned the stern-wheel passenger boats of the Canton and West River districts. The light-draught river steamboats of Yarrow or Thorneycroft have made the stern-wheel method of propulsion familiar to us in the West, but in the East, with coolie labour in place of the steam-engine, the stern-wheeler is as old as the Chinese nation

itself. The coolies are under the shelter of the high poop aft, and the rest of the vessel is generally crowded with passengers journeying up and down the river. A large single lug with a long fore-leech or luff is used when there is wind.

The Hong Kong cargo-boat is probably, as regards tonnage, construction, speed, and handiness, one of the finest sailing lighters in the world. The single,

HONG KONG CARGO-BOAT

enormous batten lugsail of brown matting is one of the most picturesque features of that or any harbour. Occasionally a mizen is carried for convenience in staying. But the smoothness and precision with which this huge sail is worked and the vessel is manœuvred among the crowd of shipping is most remarkable. To this not only the large deep rudder, with its diamond-shaped perforations, but a couple

of vast 'sculling' oars, or 'yulohs,' one upon each quarter, contribute. This form of propulsion is the usual one for big heavy craft in China. The long oar, usually in two pieces, is pivoted on the quarter or stern, the fore end being held in place by a strong lanyard to the deck. Any number of the crew can work on each oar, giving to it the motion known to seamen as 'sculling.' A vessel of several hundred tons can be propelled in this way, sometimes by two or more yulohs in each quarter, at from three to four knots. Its great advantage is that it is perfectly quiet, not exhausting, and the oar being in line with the boat, it is peculiarly applicable to crowded anchorages or narrow waterways. The motion is really that of the gondolier or of the Bangkok sampan man when his blade is brought aft to clear an obstruction. The method of poising the yuloh at the highest point of its curve causes the blade to lie flat on the water or 'feathered' in its normal position, and its tendency is to return to that position. This facilitates the work on the heavy yuloh to a very great extent.

A lofty triangle, in place of the ordinary pole-mast, is used for hoisting a single great sail in many of the craft working the rapids of the interior, in the Red River and elsewhere in the south, as was done by the Egyptian river boatmen in the time of the third and fourth dynasties eight thousand years ago,[1] and is still done in the Burmese rice-boats mentioned in Chapter X.

But, as a rule, the inland and estuary craft follow the general lines already indicated. The general flat character of the land about the deltas of the great rivers of China, and the multiplicity of waterways,

[1] Figured in Holmes's *Ancient and Modern Ships.*

natural and artificial, favour transport in bulk in vessels of considerable tonnage for river craft. Single masts prevail generally for inland navigation proper, and the hulls are always ‘ bright,’ as sailors say—that is, the natural colour of the wood not concealed by paint, but preserved and heightened by the use of *dammar* or other oil. The appearance of the Chinese boats is thus generally smart and serviceable, and for

AT HONG KONG

comfort and convenience in their deck arrangements they cannot be surpassed.

The smaller ‘ sampans ’ are innumerable in their varied designs, differing as they do in each locality. In these smaller boats the standing lug of cotton, with a bamboo yard and boom, is often used, the steering being frequently done with the after oar.

Familiar to many Westerners will be the smart little two-masted sampans which ply in Hong Kong harbour for hire. There is a shelter for the passengers aft. The steersman, woman, or child sits abaft this,

and of whatever age or sex generally handles the little craft with the ability which is bred of constant prac-

IN SWATAU

tice and utter fearlessness, whether of drowning or scraping other people's paint.

UP THE WEST RIVER

The Chinese sampan in one form or other is known to all travellers who have visited Rangoon, Penang, or Singapore, Bangkok or Batavia, and is as ubiquitous

in Eastern seas as the Chinaman himself. The best-known type is probably the gaily painted, two-tailed boats at the former ports. With their beam aft, fine

PENANG SAMPAN

entrance, flat bottom, and deep rudder, they are good carriers and rapid sailers, but their best point of sailing is undoubtedly a 'soldier's wind.' The largest class

SINGAPORE SAMPAN IN A SQUALL

of boat of this build known to me is that used at Junkseylon, where the immigrant Chinese fishermen work a two-masted boat of about 30 feet in length

SINGAPORE SAMPAN

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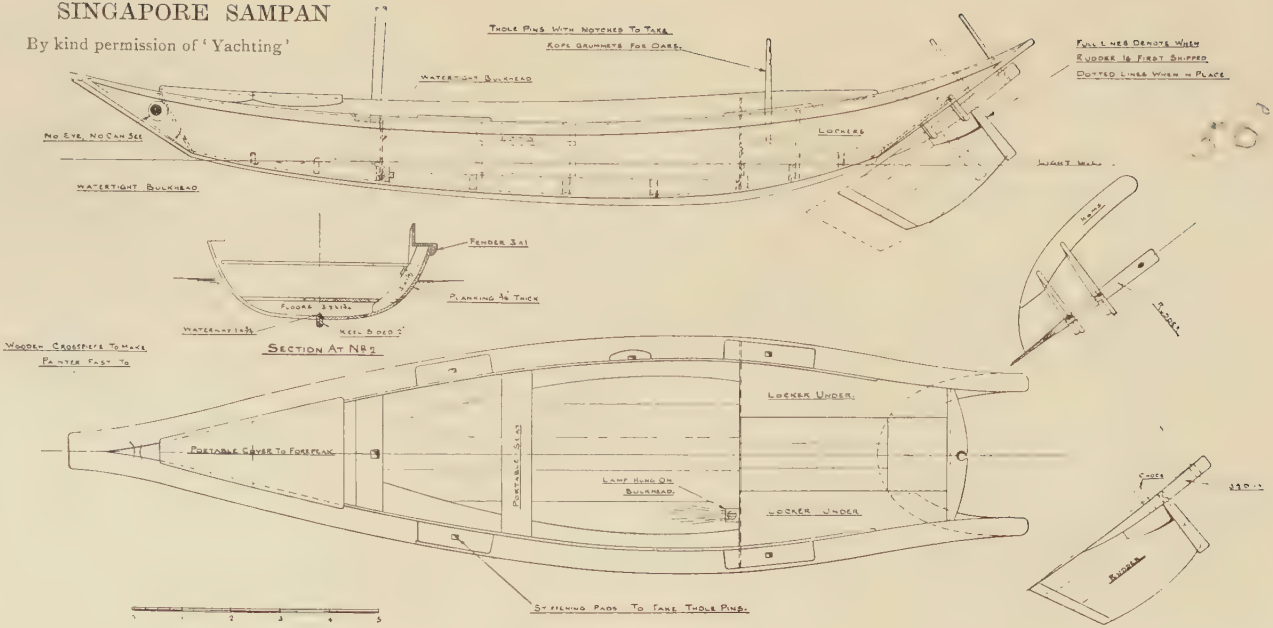

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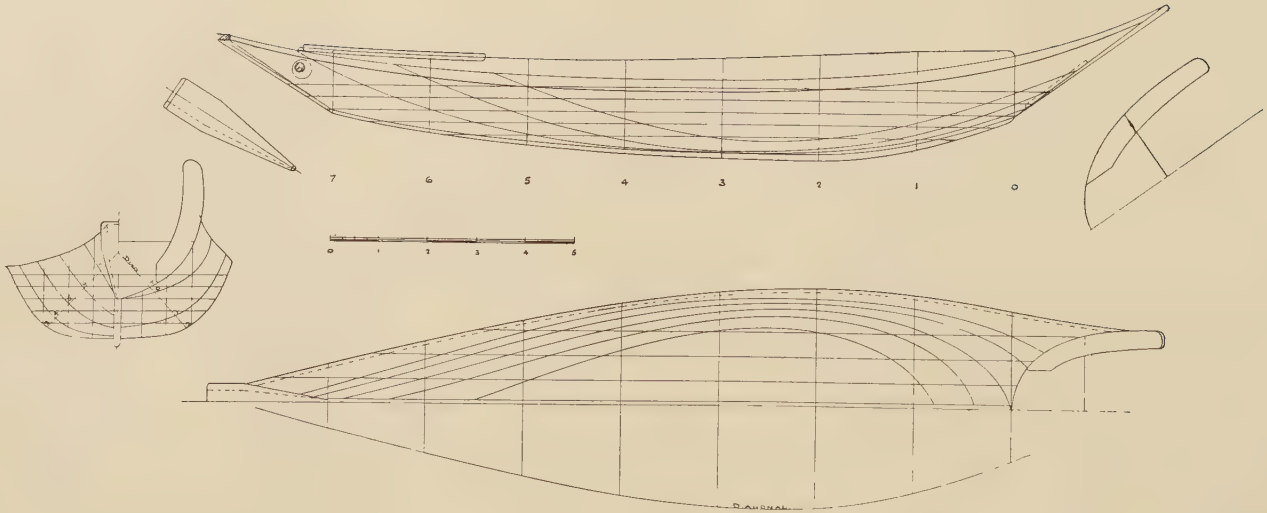


LINES OF SAMPAN
By W. Maxwell Blake

By kind permission of 'Yachting'

and 8 feet beam, rigged with battened main and fore lugsails. The masts are very raked, the mainmast aft and the foremast over the bows. They are fast and weatherly, and very stiff. The large Singapore cargo sampans approach these in size, but being only rigged with calico standing lugsails, are inferior sailers, and, as the rigging and spars are of the lightest, are unable to do more than run before the Sumatra squalls when they burst upon the harbour. At such times all their spars may be seen bending like trout-rods, and giving as if to a fish in every jump of the

FISHING SAMPANS—JUNKSEYLON

sea. With centre-boards or lee-boards they would probably carry a lot of sail as the Junkseylon boats do, and would handle well, though their long ' praam ' bow would always make them inclined to ' slam ' in a head-sea. Any one taking the trouble to sail one of these boats for himself, a performance which the good-natured Chinese boatmen regard as a very huge joke, will be surprised at the little fuss and great speed with which they push through the water in a smooth sea and nice breeze. These boats are wonderfully fitted with every device which forethought and

care can devise, with seats, with lockers under, in the aft compartment, from which the boat is worked under oars or sail, with a water-tight compartment with hatch and bulkhead for'ard of the mast, leaving ample space for cargo and passengers amidships. All additional weight comes amidships, and the stern and transom are never immersed. Consequently there is no wave-making drag under the stern as in most European boats when heavily loaded.

An ingenious suggestion has been made [1] that the 'truncated transom bow' of the sampan and her transom stern are derived from the 'cross planking fitted between the bows and sterns respectively' of the double canoe in use until recent times throughout Polynesia, the double tail of the sampan representing 'the two hulls of the double-canoe form.' The author argues from this that both kinds of craft are derived from the double canoe form. In support of this idea the word 'junk' or 'djong' is said to be connected with the Dravidian Indian word for a double canoe, 'jangala,' 'changadam,' and 'sangad.'

The comment of the practical seaman will probably be that the 'truncated transom bow' is almost universal in the Far East for small craft, as being the practical turn-up of the single-tree canoe, or sampan, which is the first and simplest form of boat throughout the rivers and sea-coasts of the Bay of Bengal and of Indo-China. Upon these hollowed tree-trunks, generally of hard worm-resisting *thingan*, in every variety size, vast numbers of the Indo-Chinese craft are built up, by carrying the timbers fitted inside upwards and building on to them with teak.

[1] J. Hornell, *The Origin of the Chinese Junk and Sampan*. Journal Asiatic Society of Bengal. Vol. xviii.

And from these the shapes of the ends are derived, with their 'truncated transom' form. This shape was also in use in Egypt 6000 years ago, without any apparent direct dependence on Polynesian fashions! The double-tail of the sampan is nothing more or less than the wings or sides of the junk-poop with the top-hamper removed, as suitable in a small boat. In some of the larger fishing sampans of Amoy and other ports, these two tails can be seen actually partially filled in with rudder-windlass and cross-pieces carrying spars and gear. As regards the verbal con-

Boat hollowed out of trunk ready to be soaked in river

Boat opened out over fire, ribs and knees in

THE MAKING OF THE SINGLE-TREE CANOE, OR SAMPAN

nection of 'junk' with 'sangad,' the seaman may be tempted to observe that philology does not appear to be an extremely exact science, and that in fact it seems to admit of even more guess-work than the entrance of the Channel on a foggy night after a week without sights.

JAPAN

In their use of mast and sail the Japanese present one of their customary surprises. From an island race of such valour, industry, and capacity, boasting

a civilisation two thousand years old, whose history is filled with the records of fearless and strenuous enterprise, and which is so advantageously situated as is the Japanese, one would have expected remarkable developments in nautical architecture, and in maritime activity generally.

Yet in actual fact the national high-pooped junk of Japan, the largest sea-going vessel developed in the islands, was always of clumsy construction, and had neither the quality of speed nor that of ability to work to windward.

Although the Japanese have had considerable intercourse with China, Korea, and Formosa at various periods, it would appear that much of this was conducted in Chinese junks, and for the rest they were content to make slow voyages in their own archaic vessels, the form and rig of which have never altered in historic times.

It has been suggested that the deliberate policy of seclusion which was adopted by the rulers of Japan after the advent of the Portuguese at the end of the sixteenth century had much to do with the small advance made by Japanese shipbuilders and seamen in the art of building and equipping sea-going vessels.

But it must be remembered that this policy was only adopted at a comparatively recent date in the nation's history, and in no way affected the early maritime enterprise of the people. We have records which show that certainly so late as 1592, when contemplating an invasion of Korea, Hideyoshi entered into negotiations with the Jesuits with a view to obtaining the loan of some of the Portuguese armed vessels of the period, which, small as we know them to have been, were in every way superior to those of

the Japanese. Nothing could give more conclusive evidence of the unsuitable character for long sea voyages of the Japanese vessel of the time immediately preceding the period of seclusion.

The junk of to-day remains practically identical with that of the sixteenth century, which in turn had altered nothing from the vessels in vogue ten centuries earlier.

This junk was a clumsy but very strongly constructed vessel of great bulk. It had a heavy raked

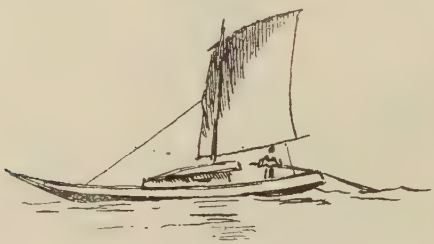
JAPANESE JUNK

stem with low fo'c'sle, a high freeboard amidships, and a lofty poop with a heavy rudder which could be hoisted or lowered in a rudder trunk. Probably no vessel ever built was more durable in construction or more ingeniously or better finished as regards every detail. Owing to the great beam and draught, it had large carrying capacity, but the lack of length and sail-power made it slow.

The rig consisted of a single heavy mast setting one lofty but narrow squaresail, not remarkable either for its set or for its excellence of cut. The chief

characteristic of hull, gear, and rigging was excessive strength and cumbersomeness.

With the growth of modern commerce in Japan there has come a great change over the face of the Japanese mercantile marine. Simultaneously with the formation of an efficient fleet of modern warships there has grown up with remarkable rapidity a great fleet of steam merchant ships, many of them of large tonnage and first-class equipment; and in the management and handling of these fleets the Japanese sailors have shown in a remarkable degree that capacity for learning, and for improving on what they



NAGASAKI SAMPAN

learn, which has in other directions been so eminently characteristic of the nation. At the same time, on an indented coastline like that of Japan, presenting sheltered waters and safe harbours, it is inevitable that the sailing-vessel must be of ever increasing use for the economical transport of certain classes of cargo; and accordingly we find that in the last thirty years the sailing tonnage of Japan has steadily grown, as the water-borne commerce between the different portions of the empire has developed.

It was hardly to be expected that a nation with such keen faculties as the Japanese possess would, under the circumstances prevailing in the Pacific at

the end of the nineteenth century, continue to pin their faith to so old and unsuitable a class of vessel as the square-rigged junk of their ancestors. Thus it has come about that the value of the fore-and-aft sail is now fully appreciated in Japan. Not only are large numbers of smart, handy little schooners now used in the coasting trade, but the assistance of the fore-and-aft sail has been invoked even on board the old-fashioned junks.

Of the crowd of vessels to be seen beating against a foul wind in any channel of the inland sea, the majority will probably be still the old class of junk with the square mainsail assisted by a fore-and-aft mizensail on the poop and a fore staysail, or possibly two, set before the mast. While formerly with main squaresail alone the junk captains never attempted to stay but were always compelled to wear ship, now, with the addition of the mizen to bring the vessel's head up and of the staysail to pay her off, they are able to stay round with comparative facility, the gripe of the stem, the shape of the underwater body, and the deep rudder all being of material assistance.

It is in the schooners, however, that modern Japan shows its fore-and-aft seamanship. These little vessels follow in most particulars the general features of the Pacific schooner, with which Japan has become familiar from the visits of Canadian and Yankee sealers. The two masts and main and fore sails are much of a size ; there is a longish jib-boom, and two or three jibs are carried besides the fore staysail. The Japanese, however, have not gone in for topmasts, and pole-masts are the rule ; nor is the square topsail often seen. With a pretty fiddle-head cut-water, the bow and waist are kept fairly low, and the greatest freeboard

is generally at the quarters and poop, thus retaining in some measure the main ideas of the old junk outline. In handling these vessels they display all the fearlessness and competence which are associated in the mind of Europe to-day with the Japanese nature.

The Chinese lugsail has in some cases been introduced in the schooner rig for the main and fore sails, with once more a great gain in the direction of flatness of set and general handiness over the old square-sail.

JAPANESE SCHOONER

In many of the smaller boats the gaff mainsail is seen in combination with two fore staysails both set inside the stem-head, an arrangement which is probably peculiar to the Japanese islands.

The later developments in mast and sail seem in every way more suited to their surroundings than did the old junk. No more favourable conditions for the production of small craft exist than in the beautiful archipelago, which is second to none in the charm and variety of its scenery and the multitude of its

natural havens. The old junk, with its clumsy bulk and inffectual rigging, seemed strangely out of place in the midst of the ordered neatness of Japanese scenery, and aroused in one's mind a constant sense of disappointment and inappropriateness.

The clean schooner, modest and efficient, graceful and capable, lying peacefully in some quiet nook among the islets, or thrashing round a tree-crowned point, her modernness toned by the Eastern spell which hangs about her, seems to be totally in harmony with the whole atmosphere of her surroundings, and

IN NAGASAKI HARBOUR

to form a notable instance of that power of the sailing-boat to adapt herself to man's ways and to take his character upon herself, in which she excels all inanimate things and approaches so nearly to the living.

CHAPTER XIV

CONCLUSION

To any one yarning about small craft, one inevitable question is always asked—'Which is the best of all—which is the ideal ship?' Is it the splendid beamy Norwegian type or the Bristol Channel pilot cutter, the French crabber of Concarneau or the clean-lined Penzance lugger, the cheerful ugly Bawley or the Scots nabby? Is it that lovely Brixham trawler with her mast so well back and her stately lift to the westerly seas, or the splendid Italian Tartane with her schooner bow and the grand curve of her lateen yard? Or, again, the Chinese junk with her comfortable poop and easy-reefing sails, or the swift Rua Pet or Malay canoe? Shall we woo the seas in the West Atlantic fore-and-after or in the familiar tops'l schooner, or shall we cheat the tides and banks in a good spritsail barge or in a Dutch Botter? Or are the Falmouth punt or the Truro river cutter the sweetest and handiest of them all?

There is no short or certain answer to that question. Each in her own way is individual, and unequalled in her qualities. Each suits her surroundings, her waters, her crew, and her work. Each is a compromise, embodying some virtues that are necessary

THE WHITE WAKE SURGING BY

in her calling, and omitting others she has less need of. The seaman must suit his own taste, his pocket, his opportunities, and his geographical position. In any of these he will find a true and willing servant, marvellous in her silent obedience and docility, ready to go out with him, carry his life in her hands, and bear him through the utmost call which the

THE FAMILIAR TOPS'L SCHOONER
(SKETCH IN A BREEZE OFF THE MANACLES)

seas and winds can make upon her qualities and his skill.

It is a well-known fact that to try to convert any type of working vessel to the needs of a yachtsman is an expensive and often a disappointing job. In this respect naturally the vessels built as pilots are likely to give the least trouble. But so far as type of hull and rig are concerned, many of these leave

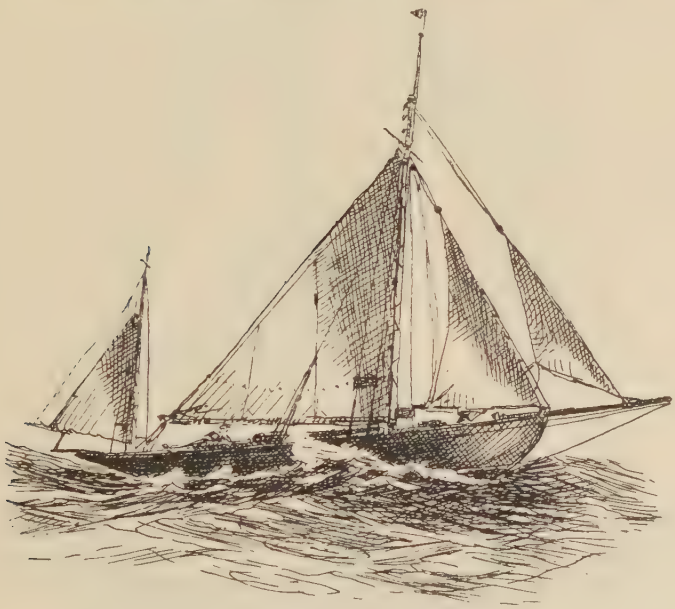
nothing to be desired, either as regards speed or sea-worthiness, for the purposes of what used to be called the Corinthian Sailor. Perhaps those of the craft described which have given most satisfaction, and have been most employed as yachts either built or adapted for the purpose, are the Norwegians, the Bristol Channel cutters, and the quay punts.

For real deep-water cruising the last-named are a bit small. For long trips something over twenty

THE FORES'L: THE BEST 'PATENT' REEFING GEAR

tons is really desirable to get through the bumping about which you are bound to get in the open sea, to keep going in a sea-way and dry below, and to make passages. A deep heel and a straight keel, a good draught of water and inside ballast are the main factors always for sea-keeping ability and for ease of motion—which latter is most necessary in order to save gear and keep the crew fit and able, and properly fed and rested.

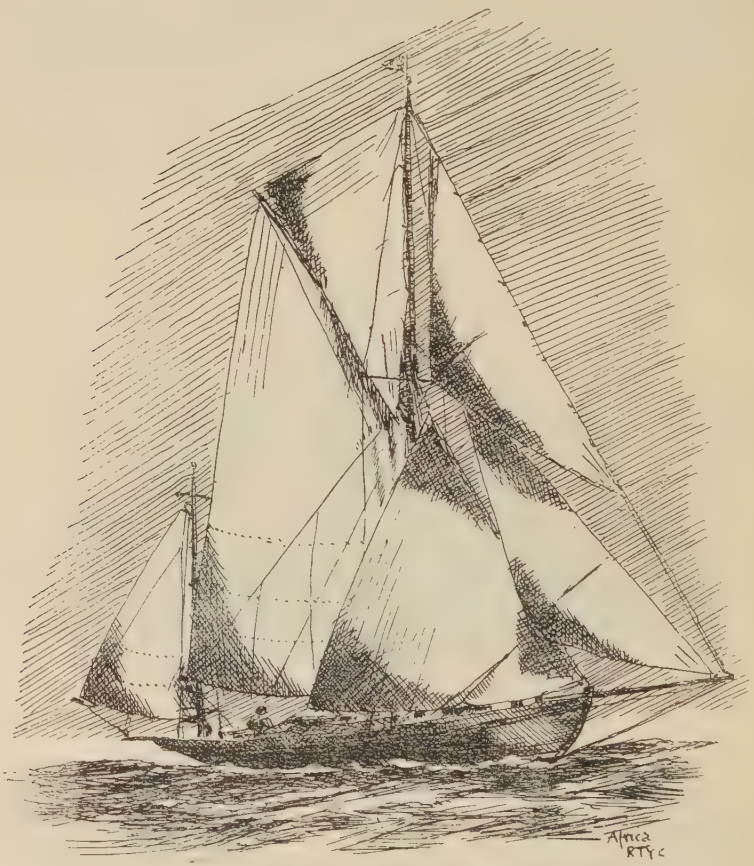
As to rig, the writer has always favoured the yawl for small craft on account of the innumerable conveniences of a well-set mizen in a sea-way, in hot suns, in entering unknown estuaries or crowded ports, or in bad weather; and also of the great advantage of a short main-boom well inboard, which enables the mainsail to be reached and reefed



'A HANDY STORM TRYS'L'

without requiring patent reef gears, which are all liable to accident. At least two headsails are needed in the ordinary plan, the jib and the foresail having their appointed uses. Roller reefing gears for headsails, too, are open to serious objection. The stay-foresail, which can easily be lowered, is the best of 'patent' reefing gears, and is quickly replaced by that most useful sail the balloon-staysail. The jib

set flying can be shifted to big jib or storm jib as required, and cannot really be improved upon. Roller reefing gears for headsails have obtained a great vogue in small yachts, and we heard the other



BALLOON STAYS'L

day of a yachtsman 'of experience' who, when requested to go forward and shift jibs when the weather was making, said, 'Shift jibs! how do you do that?'

Just as important as a good spit-fire jib and handy storm trysail are the vessel's fine weather kites. Light weather is really the weather for making passages for all small vessels and many large ones, and half the so-called cruisers are ruined by having what is called a 'snug cruising rig.' For heaven's sake, carry canvas! It is easy enough to reduce it, but you cannot set it if your spars are too small and you have not got it to set. A good balloon-staysail, the sail of the west country *par excellence*, can be used for weather-going work if properly set and sheeted, and is invaluable. Your big spinnaker should be capable of being set from masthead to bowsprit as a big reaching jib, after the manner of the Bawleys and the French crabbers or Tunny-men; or, if you can afford the luxury, by all means have a big, so-called 'Yankee,' jib-topsail, if your spinnaker is cut with too much bag in it for windward work. Then the topsail should be a well-cut and well-fitted sail so that it sets well on the wind. The true jib-header is the best of all topsails if you carry a topmast, and, set on a jack-stay, it can be made the flattest sail in the ship, a pleasure to look at, and can be carried until after you have got two reefs down. In a topsail, set is much more than size. If your craft be pole-masted set your topsail in the Polperro style, with heel of yard to a cleat on the gaff just abaft the jaws, and you will get a splendid set.

Then comes that inevitable question among yachtsmen—what of the 'Bermuda' rig for cruising? Well, for my part, if Bermuda rig means a tall and flimsy spar, whether 'built' or otherwise, with a track for mainsail-clips which you can't control

and a masthead which you cannot reach when the trouble comes, as it inevitably will, then, if we are to go out of sight of a Solent shipyard, I say 'no thank you.' I want a mast which I can get up to and hold on to, and on which, when a job of work requires doing, a man may get a safe seat (as on the spreader) for carrying on repairs at sea. Our storm-trysail is, in fact, a Bermuda sail, for it is a leg-of-mutton with rope lacing, and when properly laced (not round and round the mast, but in and out on the same side at each eyelet) it goes up and comes down as sweetly as heart can wish or emergency demand.

For the matter of that, if one fits out in the Mediterranean, I would as soon fit a Tartane's lateen-sail, or if in Singapore or Hong Kong a China lug for mainsail. But let me keep my mizen and two head-sails in any event, and one can keep command of the ship in most eventualities whatever the mainsail is cut like.

I speak but of small craft. In this book we have thought in terms of the small vessel from three to three hundred tons. I often wonder why this small ship of the seas has an appeal which is quite apart from the admiration aroused by the larger and really more wonderful sea-going vessels of the world. I believe it consists in the personal appeal which she makes, the challenge she suggests. She seems to say, 'Come on board me; take me; hoist up my canvas, get me under way yourself; with your own hands, with your own eye to see and spirit to understand, you can control and command and take me to the uttermost parts of the seas we both love.'

It is perhaps this knowledge that one could one-

self handle the vessel which gives her a special claim to one's interest. One may gaze at the passing barque with pleasure and admiration as she soars ahead with her great bow wave roaring away to windward; but it is the small pilot boat going out to meet her with two hands on her reeling deck that grips the heart; with her easy fore-and-aft rig and her gull-like buoyancy. You know you could handle her yourself with, perhaps, a well-tried companion. It is a man's love of doing things himself—of accomplishment, of action, of control,—his dislike of merely looking on or being carried helplessly, of being that accursed thing—a mere passenger. And thus to the young, to the active, to the adventurous, the appeal of the small sailing vessel cannot pass away.

Besides, it is an astonishing and oft-proven fact that the small wooden-built sailing vessel is more seaworthy than any mechanically driven vessel her own size, and is in general safer in heavy weather than any iron vessel ten times her tonnage. When the big iron sailing ships with their immense weights aloft of masts and yards were making heavy weather, and losing sails and spars, and even being dismasted, the small ketch and schooner tribe used to weather it out without loss of a rope-yarn. Taking ships all in all, these little craft properly found, and with the right men to handle them, are the safest things that float, and they will keep the sea when nothing else under ten thousand tons can do so. Their snug spars and well-cared-for gear, their sea-kindly hulls, their good proportionate draught and beam, and above all the men in them, enable these small two-masters to keep their courses and complete their long and continued voyages year in and year out,

without advertisement and without fuss or noise. Can any motor vessels of equal tonnage do the same ?

This brings us to the other question which rises in all minds to-day—' What of the motor-boat ? Will she not run you and your sails for ever off the seas ? '

It is true that to the World of Mast and Sail, in the Atlantic at least, the Great War brought a crisis of the first magnitude. A great tonnage of sailing vessels of every kind was destroyed by acts of war. Trade was stimulated, and craft which had been dismantled and laid up were brought into service. Then suddenly at the end of the war the increased mechanisation of sea-transport, and above all the unparalleled development of the internal combustion engine, rendered obsolete, or compelled the alteration almost out of recognition of, many types of familiar craft on the coasts of Northern Europe.

The inroad of the internal combustion engine has continued with accelerated speed since the Armistice ; and in the Scandinavian countries, Holland, and Great Britain, the fishing fleets are now largely fitted with motors, which, from a position of mere auxiliaries for use in calm weather, have, in many cases, become the prime movers to which the old sails, much reduced in area, are in the auxiliary position. The intense motor trawling by the Dutch and others by night and day is destroying the last of the already depleted North Sea fishing banks.

The steam-trawler and steam-drifter have, to a great extent, taken the place of the old ketch-rigged craft used in those fisheries out of the East Coast ports—Grimsby, Yarmouth, and Lowestoft.

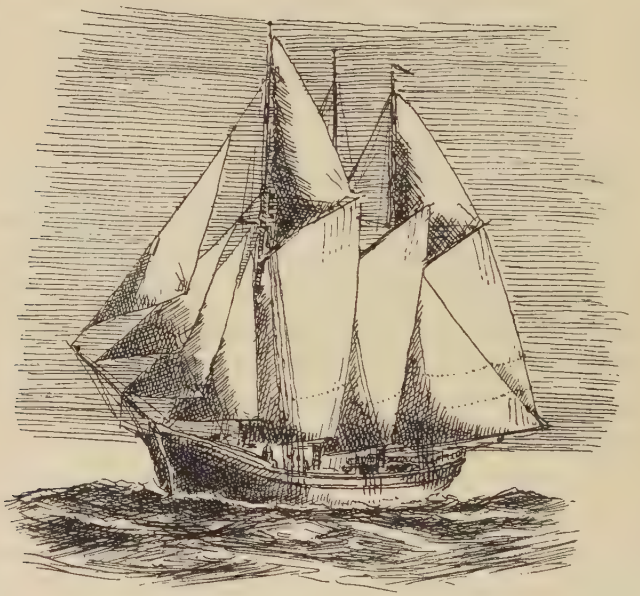
The Danish, Swedish, and Norwegian fishing-craft are now nearly all equipped with powerful Diesel or other oil-engines, and fitted with glass-windowed wheel-houses on deck. The Scots and Cornish lug-rigged drifters and crabbers have reduced their masts and are similarly equipped, and although they carry their lugsails furled on deck, they rarely set them even in a fair wind. They go farther afield, they go faster in calms and light head-winds, and they race for their market port with two and sometimes three Kelvins puffing away in their insides; but they spend vastly more on repairs, fuel, and lubrication than ever they did on rope and canvas, and a smaller percentage of boats are covering expenses by their catches. If the fishing fleets surrender to the motor the end will be total depletion of fishing grounds, reduced fleets, increased cost of fish, and falling supplies of the best of all diets for the people who need it most and can afford least to pay high prices for their fish.

The Thames Bawley has struck her topmast and dodges along the Swin under motor-power; the ubiquitous tops'l schooner, formerly seen behind every jetty and in every seascape around these islands, is sadly diminished in numbers, supplanted by stumpy motor-driven ketches and by ugly little coasting steamers with two or three pole-masts, to which high bridges and tall fo'c'sle-heads lend an almost ludicrous aspect.

The large square-riggers of ship and barque rig, too, as known at the end of the nineteenth century, have now been nearly run off the seas by steam, and only a score or so continue to show their flags—mostly under a foreign register. All this is true;

no wonder lugubrious prophecies have been heard, especially from the deep arm-chairs!

Yet consider the other aspect of the picture. On the American side of the Atlantic the four and five-masted schooners, which enjoyed a period of intense activity during the war owing to the remoteness of their coasts from belligerent activity and to the



NOVA SCOTIAMAN

occupation of the steamer tonnage in war trade, hold their own in a marked degree.

Many of these, and of three and four-masted barquantines, were built in Nova Scotian and United States ports on the East, and on the Pacific shores.

Lovely craft these Nova Scotiamen! Sitting on the poop-rail of one of them, a handsome barquantine, in Table Bay Docks, the skipper, whose

wife was voyaging with him in the most spacious and comfortable poop-cabin I have ever seen, informed me that he preferred the barquantine rig to anything else. He claimed that his ship had the close-windedness of a fore-and-after, and could run like a square-rigger with a third of the weight aloft, and a quarter of the crew required for the latter. All his halyards were manned by the motor-

'THE RIG OF THE FUTURE' (FROM A SKETCH OFF FUNCHAL)

driven winch, which worked suitably-placed drums at the foot of each mast. He criticised the fore-and-aft schooner, whether of two or of many masts, for ocean passages owing to her small sail-spread before the wind, which makes it necessary to 'tack down-wind' so as to prevent excessive rolling, keep the wind on the quarter and all sails drawing, and maintain a good speed. He did not want motor propulsion, and thought the auxiliary a good enough

thing for a fore-and-after, but not necessary for his ship. He called the barquantine 'the rig of the future.'

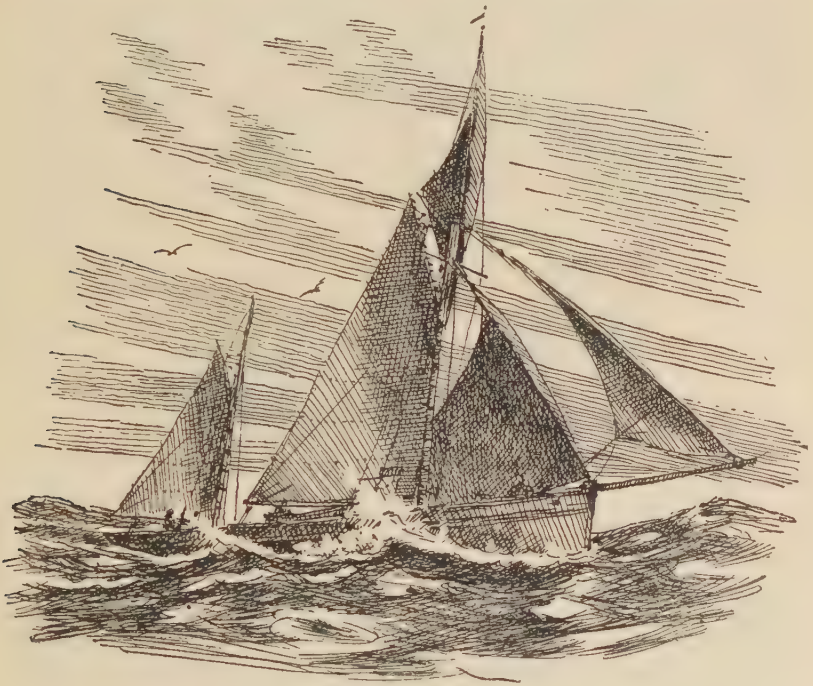
In the Baltic Sea, where the galleas is a rig still known and used, a change of wind in the Sound still releases a fleet of barquantines, three-topsail schooners, and Danish fore-and-aft schooners and ketches, which crowd together past the watching-turrets of Elsinore to distant coastlines. In the North Sea still the fine, British, east-coast trawling-ketches show their tossing tops'ls in the daylight hours and their weird forest of lights at night, while the Thames barge is still a paying proposition in spite of steam and petrol.

Again in two days' winter cruising between the Dodman and the Manacles we passed three or four barquantines, still more three-masted schooners, and a dozen topsail schooners; some Brixham trawlers, several Thames barges, several French cutter-rigged crabbers, and half a dozen stone-barge cutters, not to mention a dozen quay punts out away off the land long-lining. And to show that the younger generation is not all in motor-cars or aeroplanes, a young friend dropped in to tea at Easter having left Poole in his 28-foot cutter at lunch-time the day before with no other 'power' on board than a primus stove.[1] The only vessel of all this fleet I could really describe as slow was a motor-fitted ketch, with her propeller fouled with weed, trying to turn to windward under her pole-mast rig.

With all the undeniable convenience of the auxiliary motor-engine in calms and for entering and leaving

[1] This, too, is by no means *Marie Michon's* fastest passage between Poole and Helford.

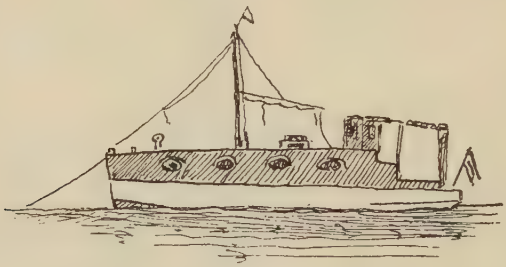
port, and in catching trains for week-end yachtsmen, the average motor auxiliary is not of sufficient power to drive a masted vessel against any real head-wind and sea, and in making passages in any weather this form of power can well remain in second place as a very valuable help to the sailing vessel, shortening



'DOWN WEST'
(BRIXHAM TRAWLER OFF THE DODMAN)

materially the length of her voyages and greatly increasing her earning power. The value of this combination has already been proved in actual practice, and we may look to its extension in the future. In calms and calm patches, in foul tides round the land, in entering and leaving port, the motor is a valuable aid.

The danger is that with an auxiliary engine crews get lazy and the sails are liable to become inefficient. It encourages a gradual but very evident deterioration in seamanship. One day last year I passed a very modern ketch-rigged auxiliary motor-yacht, twice our tonnage, in a light easterly wind and lumpy head sea, with all her lower sails shaking and indifferently set, and a rare smoke coughing out under her counter. We, with tops'l and jib-tops'l set, were going half a point nearer and a knot faster than she. Her owner made special inquiries of me



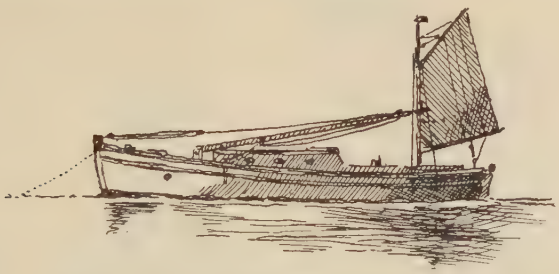
A MOTOR CRUISER
(SEEN IN FALMOUTH HARBOUR)

afterwards as to what make of engine I had. 'Æolus,' said I. 'Never heard of it—seems very quiet—what's its cost and who's the maker?' he asked. 'God Almighty,' said my mate, 'is the maker—hoist your receiver-set and you get your power for nothing. But your receiver-set must be efficient.' 'Marvellous!' said the motorman. And really he was quite right.

The other drawback to the motor-boat is the unnecessary growth of ugliness in the majority of motor-cruising vessels as at present turned out. The hog-back atrocity with caricature masts and slab sides is surely not the best in naval architecture

that our motor-boat designers can produce. The steam-yacht designers, especially in Britain, know how to introduce beautiful lines and graceful sheer, with bows and sterns renowned the world over. Why cannot the motor-boat architects obtain the same results with equal speed and efficiency, and better sea-going qualities? But this is by the way.

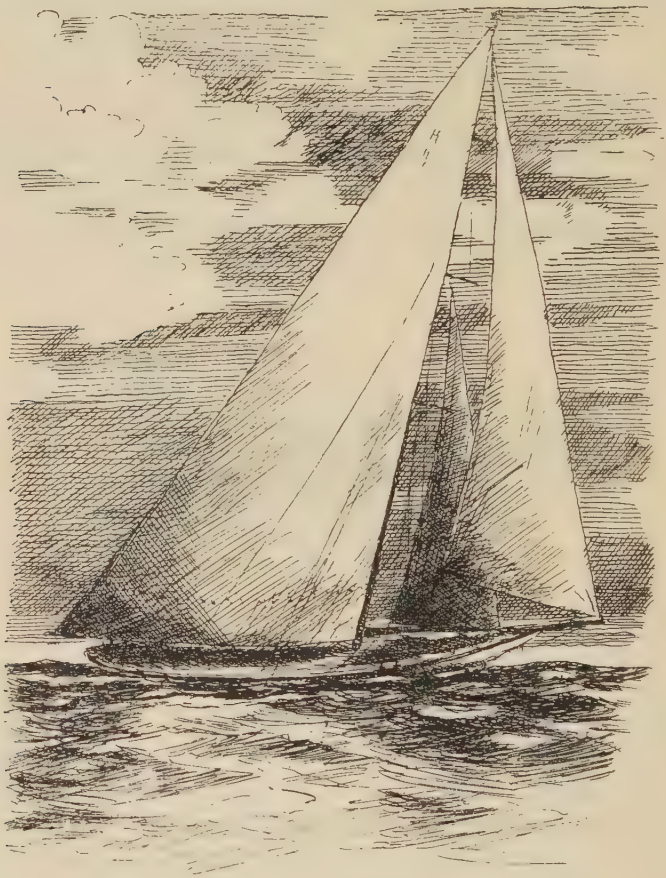
The motor-engine has hardly touched the fishing fleets of France, in the Channel, or on the west coast; and the scores of interesting types, which make those waters a delight to any seaman who sails them, continue to train the youth of the nation to the use



A SEAWORTHY MOTOR FISHING AND CRUISING BOAT

of mast, sail, and hemp, as of yore. From one end of that sea to the other the shores of the Mediterranean hardly know the explosive sound of the motor-boat, except in the case of scattered passenger craft used for pleasure or harbour purposes in a few large ports, or at centres visited by rich visitors from other countries. The whole Far East, too, from the Red Sea to Nagasaki, with similar exceptions, is free of them, and the fishing industry and the coast-wise traffic carry on with lateen-sail and bamboo yard as has been their immemorial custom, in spite of steam, oil, and electricity.

The yacht-racing fleets still grow and add to the illustrious history of the sport. Indeed, in the great Bermuda sails of the large yacht classes, a new and added beauty has invaded the regattas of the sport-



'A NEW AND ADDED BEAUTY'

loving peoples of the North. The very vastness of this single cloth soaring to the masthead has an impressiveness and dignity of its own. Even if the cruising yachtsman is shy of the dangers and

difficulties in such a vast single hoist, yet he must admire it as a great sea-spectacle. This new sea-queen impresses one by the great heights of the straining curves and shadows, the tremendous speed in a draught of wind, and the astonishing silence (so alien to most modern methods of speed) of her gliding progress. She swims past heeling without a sound or creak of block or spar; the swish of the bow wave seems lost in the heights of rounded canvas. She comes like a wondrous presence, and passes silent and serene, stooping swiftly to the horizon a towering unbroken spire of gleaming sun and shadow. Here, indeed, sail is a living thing full of life and promise.

The immense growth of the sport of yacht racing in the maritime countries of Europe, in Canada, and in the United States, and the unparalleled popularity of the practice and science of yacht cruising, especially in small craft, as evidenced in the great number of enterprising and skilful cruises which are recorded every year, attest to the appeal which mast and sail make to the healthy-minded and the adventurous, in spite of the growth of the 'luxury motor-yacht' and of ease and show in our modern civilisation. Not wealth, rank, nor leisure are necessary for the pursuit of the great adventure of going to sea in your own boat.

Go on board that small yawl which has just beat into the anchorage, now lying at anchor, with a whirl of smoke coming from her stove-pipe and a row of wet garments blowing in the main rigging, and you will find her owned and manned by some fellow—hard-worked and probably hard up—(now hard-handed and in hard training) from some great

city. Let him talk and he will tell you, in the same jargon as was used by the gunboat lieutenants at the siege of Cadiz, of distant ports, strange rigs, and the play of wind and sea. This type of modern seafaring man is a phenomenon of the times. Where one was found thirty years ago, there are now a

'HIS OWN BOAT'

thousand. He may own a car or run a factory; he may know all there is to know of the arts or sciences; of wireless, of the chemistry of explosives, of European finance, of bacteriology, of the geology of the earth, or the distance of the stars. Maybe he is a Judge of the High Court, a member of Parliament, an orator, or a soldier. But when his holiday

begins or Friday evening arrives, he is off to the ship-chandler for his tin of paint or his new marline-spike ; he stops to buy his pound of tea, two pounds of streaky bacon, and a loaf or two, and with his all-containing kit-bag over his shoulder, he passes swiftly with a smile on his face which can only mean one thing—he is joining his ship in some coast port to-night and will hoist sail at daybreak, a free man with the whole ocean before him.

These, the gentlemen adventurers, continue. They are of the ancient brotherhood of sail of the honourable company of the sea-rovers, who fear not hardship —nay, they seek it out ; who welcome all adventure so it be clean and from the gates of Heaven ; whose minstrel is the wind and their mistress the virgin deep. Harnessing to their use the encircling winds blowing untainted from the uttermost waters to urge their straining canvas, they will still find and keep alive that glory of the seas which has drawn the great in heart in all the ages. That great and ancient brotherhood of sail to which every race has brought its quota according to its genius, has been the most universal, the most useful the world has seen ; coeval with civilisation, its handmaiden in all the seas, serving faithfully in sacrifice and suffering, it has bridged the impassable, conquered the unknown, and reached the unreachable, ever widening its boundaries, and has carried war and peace, trade and art for the peoples of the earth to the present day. Though other modes come into its heritage, the end of that brotherhood is not yet.

SAIL

We know the heeling deck, the wind-torn sky,
The long-drawn song of halyard sheet and stay,
The splashing stem, the white wake surging by
Into the glory of the breaking day.

We know the curving gaff, the rounded leech,
The thrusting high-steeved bowsprit leading on,
And, jumping clear and plunging out of reach,
The gleaming dripping forefoot speeding on.

We've seen the piling canvas fold on fold
In silent pyramid of light and shade,
Like some tall spirit of unearthly mould,
Racing the white-maned horses of the Trade.

We've crept through unknown channels by the lead,
We've heard the breaking combers' warning roar,
We've sensed the hidden danger right ahead,
And conned her through where none have been before.

Ah yes! and then the quiet darkening bay,
The silhouetted outline of tall spars,
When at our sheltered mooring buoy we lay
And watched the rising fires of the stars.

Can we forget the swinging cabin light
When, by the cheerful stove, we yarned at ease,
And heard the ship-bells striking through the night,
Ringing the watches round the Seven Seas;

Or how we in the thunder of storm days,
Of close-reefed canvas and of straining shroud,
Breasted vast crests careering on their ways
Beneath the piling panoplies of cloud.

We ran her off with anxious eyes astern
Watching the crested ridges breaking high,
Then lit the pipe of peace and unconcern
And laughed to feel her run so fast and dry.

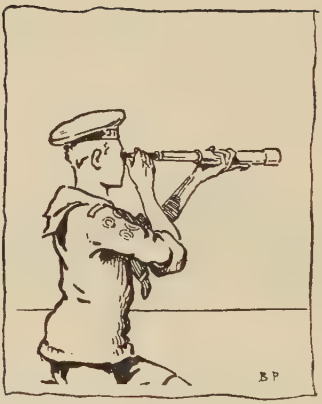
We've thrashed her up close-hauled to make the land,
And, through the squalls that laid her to the rail,
We've carried on with more than we could stand
And blessed the men who made stout rope and sail.

And, in our watch, we've seen the high light creep
Up to the zenith heralding the dawn,
Felt the great ocean waking from his sleep
And thanked the Lord of All that we were born.

Such sights and sounds repeated down the years
Come from the dim past fleets that searched the seas,
Beating their way in tempest, stress, and tears
To great endeavour. We but follow these.

Their sea-worn visions do not pass away ;
Bright in our souls they burn, and from them rise
The inspiration which can point the Way
And urge us on to highest Enterprise.

YAWL 'AFRICA,'
31*st March* 1929.


B P

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GLOSSARY

This Glossary is not intended to be in any sense exhaustive, but mainly to give the sea terms used in the foregoing pages, with the particular meanings attached to them in the text. Sea terms have altered greatly with the passing of the old wooden square-rigged ships, and the great development in small fore-and-aft rigged fleets, due to the expansion of deep sea fisheries and coast trading during the last century, has resulted in the modification of many old sea terms, and the substitution and creation of not a few new ones which were unknown to our grandfathers.

A

abaft : behind, inferred relatively from the stem, and continuing towards the stern or hinder part of the vessel.

about : circularly ; the situation of a vessel after she has gone round and trimmed sails on the opposite tack.

aft : an abbreviation for abaft ; the hinder part of a vessel.

amidships : in the middle of the vessel.

athwart : across.

B

baggara : a lateen-rigged Arab trading vessel used in the Red Sea.

balancello : *see* navicello.

balance lug : a lugsail with a boom, to which it is laced, at its foot. From one-sixth to one-third of the sail area is usually before the mast, and helps to balance the remaining portion abaft the mast. The tack is fixed to the boom abreast the mast, and perpendicularly under the halyard.

baldie : a small class of Scotch lugger used on the east coast.

barge : a cargo vessel with flat bottom and straight sides for navigation in shallow waters, the mast being usually stepped in a tabernacle for lowering when passing bridges, etc. Leeboards are generally used to increase the draught of water when sailing.

barquantine : the diminutive of barque. A vessel carrying a barque's full square-rigged foremast, but fore-and-aft rigged on the after masts.

barquette : the small half-decked, stem and stern alike, general purposes boat of the Riviera ports—always carvel-built.

batten : a scantling of wood, or small spar, sewn into and extending across a sail so as to extend the leech ; generally a scantling of wood tacked to a spar to strengthen it.

bawley boat : a cutter-rigged Thames Estuary fishing-boat, without main boom.

beam : the breadth of a vessel taken at the widest point, the centre of the vessel's side.

beat, to : to turn to windward ; the operation of making zigzag tacks against the direction of the wind.

belay, to : to make fast, or fasten a rope.

bend, to : to fasten ; used of a sail when fastened on to the yard or stay by which it is set.

Bermudian, or **'Mudian** : the name given to the lofty-cut leg-of-mutton sail long used in the Bermuda islands ; generally set with raking mast.

bilge, or bulge : a vessel's bottom on either side of the keel.

bilge-keel : an additional short keel placed outside the bilge of boats to protect the skin in grounding, and also, especially abroad, to enable them to hold a better wind when sailing and heeling over.

billy-boy : a barge-built coaster of some size, of east coast origin.

bisquine : a three-masted lugger of Granville, St Malo, or Cancale.

bitt, to : to fasten on the bitts, a strong framework fitted upright in the deck for fastening the anchor cable, etc., to.

block : a pulley ; a shell of wood (or metal) enclosing the sheave or wheel upon which the rope runs.

boeier : a handy small type of Dutch sloop, much used for yachts.

bonnet : an additional part laced to the foot of a sail in fine weather to increase its area and hoist.

boom : a spar used to extend the foot of a sail.

botter : a flat-bottomed sloop-rigged Dutch vessel with lee-boards.

bow : the fore end of a vessel, where the planks of the side round up to meet the prow or stem.

bowline : a line leading forward from a cringle in the fore edge of a sail, in order to extend it taut forward.

bowsprit : a large spar projecting out over the stem of a vessel in order to extend the jibs or head-sails. It may be *standing*, *i.e.* fixed ; or *running*, *i.e.* movable, so that it can be reefed in.

bragagna : a lateen-rigged trader of the Adriatic.

bragozzi : a lug-rigged trader of the Adriatic.

brail : a rope leading from the leech of a sail through a block on the mast or yard by which it can be trussed or gathered close up for furling.

brig : a two-masted vessel square-rigged on both main and foremasts.

brigantine : diminutive of brig, having a brig's full square-rigged foremast and main and main-topmast staysails, but a fore-and-aft rigged mainmast. The name has been variously applied in the Mediterranean.

bulk-head ; a partition built up in a vessel to separate off various portions of it below deck.

bumkin : boomkin, a small boom of great strength, usually at the stem, for extending the foot of the foresail, or aft for the mizen sheet.

bunt : the middle part or belly of a sail.

C

caïque : light Turkish craft with low waist, high stem and stern, variously rigged.

carvel-build : the method of boat-building by which the planks are all laid edge to edge, so that they present a flush and smooth surface, the seams being caulked.

cat : the name given to the large class of old Deal luggers, probably of old Norse origin when so applied ; also used for a typical American beamy boat.

centre-board : a deep plate of wood, or usually, in Western Europe and America, of metal, which is hoisted up or lowered through a case built over a longitudinal aperture in the keel of a boat, for the purpose of giving greater draught of water on certain points of sailing.

cleat : pieces of wood, with generally two thumbs or arms, used for fastening ropes upon.

clench- / **clinker-** **build** : the method of boat-building by which each plank is laid on so as to overlap the one below it, so that they present a series of ridges running longitudinally.

close-hauled : when all the sheets of the sails are hauled in close in order that the vessel may sail as near as possible against the direction of the wind.

coaming : a raised piece of woodwork running round the cock-pit, or any opening in the deck, to keep water from getting below.

coble : a type of lug-rigged fishing-boat on the north-east coast, with high bow, deep forefoot, low, shallow stern, and deep rudder.

cock-pit : the opening in the deck of a small-decked sailing-craft in which the steersman or crew can sit without the liability of falling overboard, which sitting on the deck would entail.

counter : a method of building out the stern of a vessel above the waterline, and beyond where the rudder-head comes through the deck. It enables the lines of the quarters to be carried out and finished off gradually into a round, overhanging, and graceful end.

course : the lowest square sail on a fully square-rigged mast.

crutch : a forked or twisted upright stanchion fixed in the side of a boat to support an oar or spar.

cutter : a fore-and-aft rig consisting of gaff and boom mainsail, fore staysail, and jib, with a gaff topsail and jib topsail, according to weather, set upon the topmast.

In the navy a cutter is a form of ship's-boat for rowing or sailing, rigged with lugsails, strongly built, and capable of carrying heavy weights of men or stores.

D

dahabia : a lateen-rigged, long-hulled houseboat used on the Nile.

daddler : another name for mizen.

dandy : a cutter or sloop-rigged vessel with a jigger or mizen-mast abaft. This mast in a true dandy would be fitted with a lugsail, but a gaff and

boom mizen is now often used. Often applied by fishermen to any ketch or yawl.

davit : a piece of timber or iron, with sheaves or blocks at its end, projecting over a vessel's side, to hoist up and suspend one end of a boat to.

dhow : the generic term applied to all the Arabic lateen-rigged, grab-built vessels of the Indian Ocean.

dinghy : a small boat attached to vessels for the use of the crew for going ashore, etc. Generally owing to their small length they are very broad in proportion to length to ensure stability. Also a passenger boat on the Hugli.

dip : to lower, generally with the intention of hoisting again.

draught : the depth of water required by a vessel to float her.

drift-net : a long net, the top floated by corks, and the lower edge sunk by lead sinkers, by which mackerel, herring, and pilchard are caught. A number of nets, to the extent of a mile or more, are used by each boat, and are left suspended vertically in the water for some hours after sunset, when they are usually 'shot' or set in the water in the neighbourhood where fish are thought to be schooling, the boat riding to a warp at the leeward end of the line until the nets are hauled again.

driver : a fishing-boat engaged in the drift-net fishery. Also the term applied to the mizen fore-and-aft sail in a square-rigged ship.

drogue or **sea anchor** : an arrangement for preventing drift and keeping a vessel's head to sea in bad weather. A drogue can be made by some canvas and a few spars, but most fishermen now carry a ready-made canvas bag spread at its mouth by a bamboo or iron ring, and fastened to a bridle. This can at any time be bent on to a warp and used either for heaving-to in bad weather, or for checking the boat's way when running into a crowded harbour.

E

earing : an eye spliced into the bolt-rope of a sail, usually for reefing purposes.

endsl's : mizen and head-sails, in a yawl or ketch.

F

felucca : a single-decked, lateen-rigged vessel of the Mediterranean.

fifie : a Scotch lug-rigged fishing vessel with straight stem and stern posts.

flare : a flanching or leaning outwards of the side of a vessel, usually at the bows, above the waterline, for throwing off head-seas ; in contradistinction to a tumble-home or wall side.

fluke : the triangular palm inside the point of the arm of the anchor, which on entering the ground holds the ship.

flying-sail : a light sail set aloft for light weather, which is not furled or stowed aloft.

fo'c'sle : for forecastle, a short upper deck forward, above the main deck ; in small vessels the quarters for the crew down forward ; sometimes also fore-peak.

foot : the lower edge of a sail.

fore-and-aft : in the fore-and-aft line of a vessel from stem to stern. Usually applied to sails which are normally set in this line as opposed to square sails, *e.g.* gaff and boom sails, lugsails, staysails, and jibs.

forefoot, also **gripe** : the foremost piece of the keel, connected with it by a scarf, the upper end curving into the lower portion of the stem-piece.

foresail : in square-rigged vessels the lowest squaresail on the foremast ; in lug-rigged vessels the principal sail on the foremast ; in a cutter, ketch, or dandy, the name is given to the staysail, which is of second importance to the mainsail, and is set on the forestay to the stem-head.

freeboard : the side of the vessel from the waterline to the gunwale.

furl : to roll up and bind a sail upon its stay, yard, or mast, as the case may be.

G

gaff : the spar used to extend the head of a fore-and-aft sail which is not set on a stay.

gaiassa : a lateen-rigged cargo-carrying boat of the Nile.

galleas, or **gallias** : an old term still used in the Baltic for a low-freeboard cargo ketch.

galley : a flat-built, one-decked vessel of the Mediterranean, propelled by oars or sails ; a term also used by British seamen for a long clinker-built boat which can sail or row.

galliot : a type of Dutch ketch-rigged trading vessel.

gehazi : the dhow of the East African coast.

gharawa : small Zanzibar outrigged boat.

gig : a light form of galley-built boat to row or sail.

gripe : *see* forefoot. Often a projecting piece added to the forefoot for the express purpose of making a vessel hold a better wind by creating more lateral resistance at the fore part.

grommet : a ring of rope, usually placed round a mast or spar, and seized or tied with small yarn to fit a spar which is supported by its means. In this sense more correctly a becket.

gudgeon : a metal brace with an eye bolted upon the stern-post for the pintle of the rudder to work in as upon a hinge.

gunwale : the horizontal plank fitted along, and covering or binding the heads of the timbers, and so forming the top of the boat's side.

gybe : the act of swinging a fore-and-aft sail from one side to the other by permitting the wind to come on what was the lee quarter, and so hit the sail on that side, and throw over on to the opposite side of the vessel. It may be caused by a change of course due to putting the helm up, or by a change of wind, and owing to the violence with which the sail often comes over there is a risk of carrying something away.

H

haak : a long Dutch cargo lighter.

half-deck : a deck which only covers in a portion of a boat, usually extending from the stem to the mast, and as a water-way along the sides.

halyard : a rope or tackle used for hoisting up sail.

hatch-boat : a half-decked boat with hatches for covering in all or portion of the open part, formerly much used in the lower Thames.

head : the upper edge of any sail ; the fore part of a vessel.

heel, to : to list or lie over or incline at an angle from the perpendicular, as when a vessel lies over to the wind.

heel, the : the lower or butt end of a spar ; the after end of a vessel's keel where the stern-post meets it—generally the place of greatest draught.

hoggie or **hog-boat** : an old fore-and-aft rigged clinker fishing-boat of great beam used at Brighton in the last century. Probably connected with heck-boat, an old term for a pink, but also used for a clinker-built boat with covered foresheets. Probably of Dutch origin.

hoogaars : a large Dutch type of sloop, with sprit-rig, flat bottom, and great tumble-home of the top sides.

horse : a wooden or iron bar which spans the vessel from side to side close to the deck. The sheet of a sail comes to a thimble which runs on the horse, the sheet thus being able to traverse from side to side according to the tack.

hoveller, or **hobeller** : a Cinque-Port term for pilots and their boatmen ; still used at Deal, and applied to luggers on the look-out for jobs among shipping. In Cornwall, applied to boatmen who ply for hire and are not true fishermen. The *Sailor's Word-Book* says, applied colloquially to sturdy vagrants who infest the sea-coast in bad weather in expectation of wreck or plunder.

hvalor-baad : a Norwegian fore-and-aft rigged boat, stem and stern alike, but with little sheer and great beam, used on the south coasts.

J

jackass-schooner ; still used occasionally of a schooner without main-topmast.

jib : a triangular sail set forward on a bowsprit. It may run on a stay or be set up taut by the halyards, the strain being taken by its own strong luff-rope.

jib-boom : a spar forming a continuation of the bowsprit forward to extend the jibs. It is fitted to the bowsprit by a cap and saddle, much as a top-mast is set on a lower mast, and like it can be reefed in or it can be topped up out of the way in harbour.

junk : the generic name applied to all the decked sea-going vessels of native construction, with high poop and overhanging bow, used by the Chinese, as well as to the old-fashioned craft of the Japanese.

K

keel : the lowest and principal timber of a vessel running fore-and-aft its whole length and supporting the frame or ribs like the backbone in quadrupeds. It is usually first laid on the blocks in building, forming the base of the superstructure.

Also applied to vessels on the north-east coast used for cargo-carrying. An old British name for the long vessels used by the Danes and Saxons,

from *ceol* and *cyulis*—usually written *keele* and sometimes *keyle*. Iceld. *kjoll*, barge or ship. Dan. and Swed. *kiel*, vessel. Swiz. *ceol*, barge or small vessel.

ketch : a vessel of the galliot order equipped with main and mizen masts, and usually fore-and-aft rigged, although formerly often square-rigged. The Spanish *quêche*, the Portuguese *queche*, and the old French *quaiche*.

knee : an angle of strong wood or iron for giving strength in construction, *e.g.* securing deck beams, thwarts, etc., to the sides.

kotia : a type of dhow from Cutch.

L

lacing : rope used to lace a sail through eyes in the bolt-rope to a mast or spar.

lateen : a long triangular sail bent by its fore leech to a long yard which hoists obliquely to the mast, much used in the Mediterranean and by the Arabs ; the latter, however, generally cut the sail so that a short luff stands below the heel of the yard.

lead : an instrument for discovering the depth of water, consisting of a tapered cylinder of lead attached by means of a strop to a long line.

lee : the opposite side to that on which the wind is blowing ; the direction toward which it is blowing.

leeboard : wooden or iron wings fixed by a stout bolt at the fore-end to the side of flat-bottomed vessels. When the after-end is lowered the leeboard stands up and down in the water, making the draught greater, and by its flat side tending to decrease leeway or drift to leeward.

leech : the borders or edges of a sail which are more or less perpendicular. The fore-leech is generally called the luff, and consequently in fore-and-aft vessels the leech is nearly always the after-edge running from the peak earing to the clew.

leeward, or **leward** : on the lee side.

leeway : the drift which a sailing-vessel makes to leeward.

leg-of-mutton : a three-cornered fore-and-aft sail with its luff laced to a mast ; very handy and safe, particularly for a mizen.

list : to lie over or incline at an angle from the perpendicular.

lodsbaad : Norwegian pilot-boat.

long-lines : used in deep-sea line fishing for such fish as cod, halibut, etc.

luff : the fore leech or edge of a sail.

luff, to : to bring a vessel's head nearer the wind.

lugger : a vessel rigged with lugsails.

lugsail : a powerful form of fore-and-aft sail hoisted on a yard which is slung from one-quarter to one-third of its length forward of the mast. The end of the halyard is usually fastened to an iron hoop or traveller which keeps the yard to the mast. The sail is set taut upon its luff-rope, which is swayed up so as to stand rigid. It is much used by fishermen as being simple and involving but little rigging.

dipping lug : in the case where the tack of the sail is made fast at some distance in front of the mast, the sail has always to be hoisted on the lee

side of the mast to get the best results from it, and consequently it must be dipped on each fresh tack and hoisted on the new lee side.

standing lug : when the tack is fastened at the mast it is not necessary to dip, but the sail can be left standing as the mast does not interfere with its set.

balance lug : a lugsail laced to a boom at its foot has its tack at the mast, and also requires no dipping.

lumber iron : a forked crutch or stanchion fixed upright in the gunwale to hold oars, spars, or sails when not in use.

M

mainsail : the principal sail on the mainmast.

malar panshi : a country boat of the Indian rivers.

mashwa or **mashuwa** : a small Arab working boat.

masthead : the portion of the mast above where the shrouds or main rigging are secured to the truck or cap.

mizen : the aftermost mast of a vessel of two or three masts, generally the smallest ; often called jigger by fishermen.

mizen sail : the sail set upon the mizen mast.

moleta : a lateen-rigged fishing-boat of the Tagus.

mumble-bee : a small cutter-rigged type of trawler of Brixham.

N

nabby : a Scotch lug-rigged boat with very raking mast and a jib, used on the west coast.

nagar : a cargo-boat used on the upper Nile.

nauri : a large class of dhow from Sind and Baluchistan.

navicello : a two-masted Italian coaster, with peculiar staysail rig forward and short-hoist mainsail ; also called balancelle.

nordlandsbaad : a Norwegian north-country boat, stem and stern alike, with high ends and low waist, and a single squaresail.

O

outhaul : the rope used to haul out a sail along a spar on which it is set.

outrigger : a boom or spar rigged out over the side to extend a sail ; a counterpoising log of wood rigged out by cross-pieces from a canoe or boat and floating on the water to prevent capsizing.

P

padow or **padas** : a large dhow from ports north of Bombay.

paranzello : a small lateen-rigged yawl of the Mediterranean.

parrel : a band of rope for keeping the yard into the mast, often fitted with a number of bull's-eye trucks of wood to prevent friction in hoisting. Wooden ribs were fitted between the bull's-eye trucks in square-rigged ships for facility of travelling.

pattamar : a lateen-rigged dhow type of cargo-vessel used by the Mohammedan seamen on the Bombay coast.

peak : the upper outer corner of a gaff-sail or lug ; the upper outer end of a gaff or yard.

peter boat : an open fishing-boat of Norse origin long used in the Thames. They were clinker-built and stem and stern alike, as were the old Norway yawls, and had a fish-well amidships ; generally spritsail rigged.

pink : an old name now applied to the clinker-built Scheveningen fishing-boats.

pintle : metal hooks bolted into the rudder which fit into the gudgeons fixed in the stern-post.

pole-mast : single spar mast, without topmast.

poop : from the latin *puppis ;* the aftermost portion of the hull, often raised above the general line of the gunwale.

pooped, to be : the breaking of a heavy sea over the stern or quarter of a vessel when running in heavy weather.

port : the left side looking forward.

prahu : a Malay term for boat.

pulwar : a country boat of the Indian rivers.

punt : an Anglo-Saxon term for a flat-bottomed boat ; generally used at sea for a broad, beamy boat of small size, such as a dinghy. Also a large class of deep-ballasted half-decked boat at Falmouth.

purchase : a mechanical contrivance which increases the force applied. At sea generally a combination of pulleys for moving and hoisting heavy weights such as spars, sails, etc.

Q

quarter : the portion of the vessel's side between the stern and the beam, abaft the middle section.

R

rake : a fore-and-aft inclination or deviation of mast or spars, or stem or stern post, from the vertical.

redningskoïte : a Norwegian sea-keeping lifeboat for assisting the Northland fishing fleets in bad weather.

reef, to : to tie up a portion of a sail in a hard wind so as to reduce its area, by means of reef-points, reef-earing, reef-cringle, etc. Also to shorten in a topmast or bowsprit.

reeve, to : to pass a rope through an aperture such as the channel of a block or sheave for hauling upon.

rib : the timbers which rise from the keel of a vessel to the top of its side upon which the skin planking is fastened.

rig : the method in which masts, sails, and ropes are fitted to a vessel.

rigging : a general name given to all ropes and chains employed to support the masts and trim and set the sails. Standing rigging consists of those ropes which are seldom handled, such as stays and shrouds which support masts ; running rigging, of those which are constantly handled in making, shortening, or trimming sails.

rua : the Siamese word for boat ; the prefix for all boat names.

ruffles : a hole cut in the keel of boats which have to be hauled up a beach on landing. A chain is rove through and taken to a capstan. Hauling on this pivot tends to lift the boat over the sand and gravel.

run : the curvature of the lines of a vessel's hull towards the after part.

runner : the tackle used in tautening up the backstay ; hence the backstay itself in small craft.

running : applied to a bowsprit, or other spar, which can be run in and out, and can so be reefed, having in the case of a bowsprit fid-holes in it for the purpose. Applied to rigging which is constantly handled in working the vessel. Also a vessel when sailing before the wind.

S

sagg : to give way under pressure, usually of the wind.

saic, or **sayke** : an old type of Turkish ketch.

sambuk : a type of Red Sea dhow.

sampan : generally applied to all small, open, or half-decked boats of Chinese build.

scandalise : to clew up, of a mainsail when the peak is lowered, and tack hauled up.

schokker : a Dutch type of sloop ; a large-size botter.

schooner : a two-masted fore-and-aft rigged vessel, the foremast being the smaller of the two masts, the principal or mainsail being on the aftermast, which is stepped very near the middle of the vessel.

schuyt : a Dutch one-masted vessel.

sea-anchor : *see* drogue.

seine : a net which is shot by a boat round a school of fish, the ends being brought together and the lower edge of the net pursed up. The circumference of the net is reduced by hauling in the net until the fish are all brought into a bunch and can be bailed out.

settee : long, sharp, single-decked lateen-rigged vessels of the Mediterranean, without topmasts.

shank : the bar or shaft of an anchor constituting its main piece, at one end of which is the stock and at the other the arms.

sheave : the wheel on which the rope runs in a block, or in a mast or spar pierced for the purpose.

sheave-hole : the channel pierced in a mast or spar for a rope to be rove through.

sheer : the hang or curve in a vessel's side which generally rises towards the stem and stern.

sheet : the rope fastened to the clew or lower aft corner of a sail by which it is controlled and trimmed to the wind when sailing.

shoulder-of-mutton : often used for **leg-of-mutton**, *q.v.*

skaffie, or **scaith** : a type of Scotch lugger with raked stem and stern posts, used principally on the coastline between Fraserburgh and Dornoch, and apparently of Norse origin.

skidds : pieces of wood laid under a vessel's bottom for launching her off from the shore.

skiff : a light open boat, generally for rowing, and built with considerable flare forward.

sliding gunter : a light spar running on gunter-irons up and down a mast on the afterside to increase its height. A high peaked sail can thus be set reaching above the masthead.

sloop : an old term applied to a vessel rigged as a cutter but with a standing bowsprit and one or more jibs set on standing stays. Also when the foresail and jib are in one, and set on a short standing bowsprit.

smack : originally a cutter-rigged vessel of considerable tonnage used for trading or passenger traffic, such as the old Leith smacks. The term has been applied by fishermen to all large fishing-craft, fore-and-aft rigged in contradistinction to lug-rigged, whether cutter or dandy or ketch rigged, as most of the modern trawlers have become.

snaekke : a Norwegian skiff.

spiller : a set line with a large number of baited hooks, much used by coast fishermen.

spinnaker : properly a large triangular sail of very light material for setting from the masthead, goose-winged with the mainsail, when going before the wind. By the Thames bargemen applied to the flying jib set on the topmast stay in fine weather.

spreet : a spar used to extend the peak of some fore-and-aft sails. The head fits into the roping at the peak of the sail, and the heel into a snotter or grommet low down on the mast, the spar thus standing diagonally across the sail.

spritsail : a fore-and-aft sail usually without boom and fitted with brails, which is set by a spreet in place of a gaff.

squaresail : a four-cornered sail extended by a yard slung by the middle.

square-rigged : a vessel rigged mainly with squaresails as opposed to fore-and-aft sails. The square rig lends itself to use in the largest sailing vessels, and has been the rig of the finest fighting sailing fleets the world has seen.

stanchion : a fixed upright support.

standing : applied to a bowsprit, or other spar, which is kept in its place and is not run in or unshipped or reefed ; also to rigging, such as shrouds and stays, which is not constantly handled in working a vessel.

starboard : the old *stjornbordi*, or Norse steering side. The right hand looking forward. The Anglo-Saxon *steorabord*.

stay : a strong rope extending from the upper part of a mast in a fore-and-aft direction to hold the mast and prevent it from springing when pitching deep, or from bending when with a weight of sail upon it. A stay in a forward direction is a *forestay*, and those brought to the side abaft the mast are *backstays*. As part of the standing rigging these are generally made of steel wire when possible. Colloquially the term is often applied to the shrouds or standing rigging supporting the mast laterally.

stay, to : to tack, or bring a vessel's head up to the wind for going about on a new tack.

staysail : a triangular sail hoisted along a stay on which the luff travels attached by hanks or lacing, and by which the luff is rendered rigid, *e.g.* for topmast staysail, fore staysail, etc.

stem, or **stempiece** : the cutwater or foremost piece of a vessel on which the curves of the bow unite, and which is scarfed into the keel.

step : the place where the mast or other fixture is set up.

stern : the afterpart of the vessel where the quarters are rounded off and converge. It may be *sharp*, *i.e.* with stern-post similar to the stem and rudder hung outside ; or a *counter* stern, *q.v.*, or a *square* or *transom*-stern.

stern-post : the opposite to the stem ; scarfed into the keel. The gudgeons carrying the rudder are usually bolted into it.

stock : the crossbar secured to the upper end of the shank of an anchor at right angles to the flukes.

strake : one breadth of planking in a vessel taken longitudinally, *e.g.* a wash-strake, added to the gunwale or upper strake to keep off water or spray.

sweep : a long, heavy oar used in a sailing-vessel by one or more men in case of calm.

swig, or **swing**, or **sway up** : to pull on to a bight of a rope by jerks when its lower end is fast ; or to gain on a rope by jumping a man's weight down, *e.g.* in setting up a lugsail or jib or any other sail which has to be set up very taut along its luff.

T

tabernacle : a strong trunk built on the deck of barge-built vessels, in which the foot of the mast hinges so that it can be lowered aft by the forestay for passing under bridges, etc.

tack : the lower fore-angle of a fore-and-aft sail.

tack, to : to go about, or change course from one board to another, by which the windward becomes the leeward side, and *vice versâ*.

tackle : a purchase formed by the connection of a fall or rope with two or more blocks.

tartane : the lateen-rigged cargo and fishing vessel of the Riviera coastline.

taut : tight.

tchektirmé : a Turkish type of coaster.

thrash : to beat to windward.

throat : the widened and hollowed end of a gaff next the mast, the opposite end to the peak. Hence also the upper fore corner of the sail.

thwarts, athwarts : seats or benches athwart a boat on which rowers sit.

tiller : the piece of wood or metal which is fitted into the rudder head by means of which the rudder is worked.

tjalk : a Dutch round-ended trader, with broad leeboards.

tjotter : a small type of Dutch sloop much used for pleasure purposes.

top : the platform on the head of the lower mast upon which the heel of the topmast stands, and to which the topmast shrouds are spread.

top, to : to raise one end of a boom or yard.

topgallant : applied to the mast and sail which in square-rigged vessels come above the topmast and topsails.

topmast : an upper mast raised at the head of the lower mast to give greater height than would be possible with a single spar.

topsail : the sail set on the topmast. It may be a square topsail set on square yards, as in a topsail schooner ; or a gaff topsail extended on the mainsail gaff as in a cutter—which may further be a jib-header, jack-yarder, etc. ; or a jib-topsail, set on the topmast stay.

topside : the portion of the side of a vessel which comes above the sheer-strake.

trabacola : a trading coaster of the Adriatic.

trammel : a set net used by fishermen, with stone anchors at the ends to keep it extended. Fish coming against it get caught by the gills.

tramp : a slang expression for a cargo steamer not engaged upon any regular run, but taking freights as they offer.

transom : a thwartship bulkhead. Many boats are built with a transom-stern, which consists of a bulkhead placed across the stern-post, the quarters being ended off abruptly, and thus carrying the body shape of the boat further aft above the waterline than if they were rounded into the stern-post.

trawl ; a strong bag net, dragged along the bottom by a vessel propelled by sails or steam. Its mouth is either extended by a strong beam or by an 'otter,' which has been latterly perfected by steam trawlers, which can keep up a considerable and undeviating speed.

trinchetto : French, *arbre le trinquet* ; Arab, *trinkeitte*. The old foremast of Mediterranean lateen-rigged craft.

tumble-home : the reverse of flare—when the section shows a curve inward of the vessel's side above the point of extreme breadth.

U

under way : when a vessel is moving, and has gathered way.

V

vang : a guy or rope leading from the end of a gaff to the rail by which to steady the gaff or prevent it sagging away to leeward.

velocera : an Italian coaster.

W

waist : the place of lowest freeboard, generally amidships.

wash-strake : an upper strake, often attached by stud-pins to the gunwales of boats to keep out spray and water.

waterway : a channel along the side made of deck planks to carry off water. In half-decked boats it reduces the danger from excessive heeling.

way : movement through the water.

wear : in contradistinction to tacking or staying ; to put up the helm so as to turn the vessel on to the other tack by sending her head round before the wind.

weather : at sea the state of the atmosphere with regard to the degree of wind. Hence the portion of the compass from which the wind comes. The weather side—the side towards the wind ; weather helm—when the vessel is inclined to run up to the wind, and requires the ' helm ' to be kept aweather to keep her off the wind.

well : a trunk or open space fitted into a vessel ; sometimes with perforated bottom in fishing-boats to keep fish alive.

weigh : to lift the anchor.

wherry : a sharp, light, shallow boat, generally stem and stern alike, with fine entry and run, and usually without the customary gunwale piece. The French *houari* ; old English *ouare*.

whisker : iron spars extending each side from the stem for spreading the guys of the bowsprit.

windward : towards the direction of the wind.

X

xebec : an old three-masted Mediterranean vessel of sharp floor and long overhanging ends, rigged with lateen-sails, and sometimes with squaresails on the foremast.

Y

yaegt : a Norwegian coast vessel.

yard : a long spar slung in the neighbourhood of the centre so that it crosses the mast. It may be square, *i.e.* at right angles to the mast, and slung at the centre ; or lateen or lug, when it stands at an angle, and is slung one-third to one-quarter of its length from the fore-end.

yawl : *qu.* the ancient γαῦλος. The Scandinavian *yol*, properly a light vessel, stem and stern alike, and clinker-built like the Sondmöersk boats of Norway. The Yarmouth yawls were true yawls, and, like many other yawl-built boats of England, were probably of Norse design originally. The term is now applied to dandy-rigged vessels, and many cutter-rigged vessels become yawls by having the main boom cut down and a small jigger, or mizen, mast and sail placed on the counter.

yoke : a transverse board or metal bar, a substitute for the tiller, which crosses the rudder head. Two lines extend from its opposite ends to the steersman. In some Norse boats, where the yoke has only one arm, a wooden bar is jointed at its outer end, and is worked by the helmsman.

Z

zulu : a class of Scotch fishing-lugger with straight stem and raking stern-post.

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